

CIVIL DEFENCE IN INDIA

BY

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CHAPTER I

THE CITY AT PEACE AND AT WAR

DEFINITIONS are often difficult, sometimes dangerous, frequently of little interest and more often than not clumsy. Nevertheless, at the outset of a book on civil defence it seems necessary to define what we mean by the term. Broadly speaking, it is protection of the civil population in time of war and, more particularly, protection of the civil population by its own effort, and protection from attacks from the air. By derivation, the word 'civil' suggests city and it is, in fact, with protection of the city that civil defence is mainly concerned.

A city has been described by Lewis Mumford, the world's greatest authority on the subject, as 'the point of maximum concentration for the power and culture of a community'. The three vital words here, for our purpose, are concentration, power and community. Firstly, it is a place where numbers of people are gathered together. Secondly, it houses the motive force that drives the state. And thirdly, it is composed of people who are compelled by force of circumstances to live in close proximity with each other and who, whether they like it or not, are forced in consequence to make certain adjustments in their mutual relationships towards each other. Anyone, in short, who lives in a city, finds himself saddled with a certain number of duties and obligations towards his neighbours, which he cannot evade, receiving in return certain services organized by the community's representatives. Rights and duties are apt to be far more closely defined and far more extensive in a city than a rural area, and it is this which endows it with its corporate life. To say, therefore, that a city is in need of defence by itself is to

imply that there is a responsibility on all of its citizens individually to defend it.

Civil defence, then, in essence is defence of citizens by citizens. It is not defence of the civil population by the military. The military only take over control of an area inhabited by a civil population when all other methods of defending it have broken down, and the result of such an assumption of control will probably be that those of the civil population who have remained will be forced to depart. It is the civil officers who conduct the civil defence, even though the powers conferred on them by the legislature may make them just as omnipotent as a military dictator.

To the man in the street, civil defence probably connotes merely what is popularly known as A.R.P., that is to say, Air Raid Precautions. The scope of its activities, however, is far wider than that. A.R.P. is, strictly speaking, confined to the actual steps taken to deal with air raids, both at the time, to minimize their effect, and immediately afterwards, to repair the damage done as quickly as possible. It thus includes within its orbit the elementary precautions every householder can take, such as the provision of sandbags and stirrup-pumps and the laying-in of extra foodstuffs, the arrangement of adequate shelters, public and private, together with the various organized services whose purpose is to deal with the actual emergency, either as reporters of damage and co-ordinators of activities, or to provide some special relief such as first aid, rescue of persons trapped beneath buildings, or fire-fighting. All these activities come within the purview of civil defence, but it covers many other fields also, such as the feeding and sheltering of persons rendered homeless in air raids, the evacuation of large sections of the population should it prove necessary and the strengthening of the morale both of those who have decided to remain and of those who are hesitating whether to flee away.

Thus it can be seen that its aspect is very wide. This, however, is only one side of the picture—civil defence as an organization of the civil authorities. Of almost equal importance is civil defence of the individual by himself. If the individual is protected from panic, if he is saved from the insidious effects of rumour, the state is likewise saved, because the state, after all, is only a collection of individuals. The prevention of panic in the individual, therefore, and the allaying of rumour demand nearly as much attention from those responsible for the city's defence as the active features such as the digging of trenches or the provision of an adequate water-supply.

Civil defence is not, however, solely confined to the cities. It has an equally important part to play in the villages and countryside should a direct attack threaten. As the manner of its organization here differs from that in the city, we will leave consideration of it to a later portion of this book and for the present concentrate on civil defence in the city.

The modern city, resulting from the fact that it is an agglomeration of a large number of different persons and different institutions, is a highly complex organization. It is not sufficient for a body of men to congregate in one area, build houses side by side and ignore each other's existence completely. There would be no such thing as communal life were that the case. Instead, partly through the combined efforts of the inhabitants of any closely-defined area, partly by reason of superimposition from above, there has grown up through the ages a highly-organized system of administration and public service, whereby each member of the society is able to enjoy benefits common to all. The process has, of course, been gradual: the earliest settlements of mankind were grouped together solely for purposes of protection. At a later date, it was found that trade flourished where men were gathered together and settlements began to spring up

at places likely to be favourable to trade. And then it was not long before it was discovered that, in a place where men had settled down together, various amenities could be provided for the benefit of the whole community by the united contribution of that community. In this way, the system of choosing representatives to speak and act on one's own behalf sprang up, leading slowly but inevitably to the present system of municipal administration.

It is not necessary in a work of this nature to discuss the very complex system of municipal administration that exists in any large city at the present day. It will be sufficient to draw attention to the more important services which the elected representatives of a community have to furnish for the community. First of all, a water-supply, without which any community would be unable to exist. Next, a conservancy system, varying from the half-hearted employment of a few bazaar sweepers to a detailed organization of drainage and sanitation covering a very wide area. In some towns, the municipality will have control over the systems of conveyance—buses and trams, in addition to acting as the licensing authority for public vehicles. It will also manage the street lighting and at least have a say in, if not the complete direction of, the city's hospitals and other medical services. It will also be the authority for vaccination and other preventive health measures, and will be the recorder of all births and deaths. It will, finally, be responsible for maintaining a Fire Brigade, and in some countries it is also liable for the maintenance of the local police.

Hand in hand with the municipality are the various public utility services, such as gas and electric supply for private consumers; tramway and bus services (where these are not provided by the municipality itself), and telephones. It will be realized, therefore, that a modern city's administration is

a very complex affair, entailing the interplay of many different services and organizations.

If the smooth running of these services is of importance in time of peace, it is doubly important in time of war. If any one of the public utility services breaks down under stress of enemy action, there is always the chance that public morale will break down with it also, for there are few things so disconcerting as the deprivation of some of the amenities of everyday life. Hongkong and Singapore, for instance, fell as early as they did partly because their water-supply was either captured or destroyed by the enemy and the defenders were faced with the prospect of dying of thirst or, at the very least, being forced to drink impure water. The public utilities, therefore, are amongst the main objects the enemy aims at when he comes within striking distance of the city; the Germans, in their raids on London, wasted many tons of bombs in an endeavour to put the power station at Lots Road, Chelsea, out of action. If the enemy succeeds in disabling any of the essential features of communal life, he can, with some justification, regard his battle as half won. When the city comes directly under fire, therefore, it is possible to envisage the enhanced importance that the utilities and communal living as a whole attain in time of war. In peace time, one takes them very much for granted, so integral a part of our way of living have they become; in war time, one realizes that they are not to be taken for granted and that they must be preserved at all costs if our whole communal way of living is not to break down. In other words, we realize our debt to them from our daily existence and this gives communal living a heightened importance. In war time, therefore, we tend to live as a community even more than in time of peace.

I have already indicated that civil defence is defence of the community as a whole from hostile attack, of whatever

nature it may be. It would be as well to examine here more in detail what other implications the phrase possesses. The military equivalent of the term is 'passive air defence' and this perhaps explains more accurately what is involved, for the object of A.R.P. and civil defence as a whole is not to beat off the enemy attack but to neutralize it. It thus stands in contrast to active defence by the fighting forces, of which the two most familiar features are fighter aircraft and anti-aircraft guns. Both these weapons destroy the enemy's power of approaching his target and wreaking the desired havoc. A.R.P. cannot do this, but it can ensure that if bombs do drop, the damage they will do will be reduced to the bare minimum. Civil defence is a matter that affects all aspects of our civil life and hence it is the responsibility of the civil administration of the Government and not the military. It would not be possible for civil defence to be placed under military administration for reasons of economy and practicability.

Civil defence under modern conditions of warfare has become a very complex affair, and has many aspects. There are, to start with, the various preventive measures that can be undertaken before the attack starts. These include camouflage of buildings and prominent landmarks, so that the enemy is not able to see his target so clearly as if it stood out prominently from the surrounding landscape; it must be remembered that a bomber aeroplane flies at great speed and must judge the time for releasing its cargo to a split second if it is to bomb its target effectively. In order to judge such time, the pilot must prepare himself some time in advance, which means that he has to keep a constant look-out for the landscape ahead of him. If buildings or landmarks are disguised by camouflage, it does not mean that they become invisible from the air, but merely that they become much more difficult of recognition and only

Camouflage

recognizable at all from a much shorter distance away, so that it may be too late for the pilot when he has finally recognized them to discharge his salvo in time. Camouflage in England has been responsible for the saving of much valuable property and, presumably, would be equally efficacious in India, where so much of the surrounding colours are neutral greens and browns.

If camouflage is sometimes left to the discretion of the individual citizen, as far as the protection of his own property is concerned, the next form of preventive action leaves him no option but to obey the decisions of the authorities. This is the various lighting restrictions, more popularly known as the black-out, the standard of which is uniform in any given area and infringement of which is likely to lead to unpleasant penal consequences.

Another preventive measure which comes within the purview of civil defence is evacuation. There are two different forms of evacuation—the evacuation of the non-essential part of the population prior to the period of bombing attacks, to lessen pressure on the economic resources of the city, and wholesale evacuation of the entire population as a result of a direct threat of enemy occupation. The latter scarcely falls within the sphere of civil defence at all, being based on military necessity and subject to military command, but the former demands close attention from the civil authorities and will be discussed in greater detail later on in this book. To take as an example at this stage, however, in the early days of the present war, the vast majority of children of school age, together, in many cases, with their mothers, were evacuated from London and other danger areas to places thought to provide greater safety. The lessons learned in this trial evacuation could be copied with advantage in other parts of the world where air attack threatens.

Other preventive features of civil defence that rise for

consideration are the provision of suitable shelters for the population, either public ones, to house large sections of the people, or private ones, erected for individuals on their own property; the strengthening of existing buildings against air attacks; the structural protection of vital plant and supplies, such as generating plants, telephone exchanges or oil containers; a warning system, so that the public can be adequately advised when enemy raiders may be expected overhead; and finally, the instruction of the public in the various air raid precautions they can take on their own account. Such of these features as the individual citizen can carry out himself will be discussed later on in this book.

All these aspects of civil defence have to be considered before the raids actually start—or else the city's defences will not be complete. The A.R.P. services proper only come into action when the bombs begin to fall, although of course their organization should have been perfected long before, so that they can cope with any situation that may arise with the utmost smoothness. There will be occasions to mention the experiences of Rangoon in its first two raids elsewhere in this book; it will be sufficient to note here that one great reason of so much initial confusion was the fact that the organization of the A.R.P. services had commenced relatively late and there was not that full protection which only full training can bring.

The A.R.P. services, therefore, are arrangements for dealing with the immediate effects of air raids. The one that is most immediately obvious to the man in the street is the Wardens Service, for the warden is the link between the general public and the authorities controlling A.R.P. operations and is indeed, if he does his job properly, the guide, philosopher and friend of every individual in his sector. But there are other A.R.P. services of equal importance if damage from air raids, both human and material, is to be reduced to the minimum. These are the various services for dealing

with the injured: First Aid Posts, First Aid Parties and Ambulances; Street Fire Parties, to supplement the regular Fire Brigade, which is likely to be sadly overburdened at a time of real crisis, if incendiary bombs fall; rescue parties, light and heavy, for the saving of persons trapped beneath debris; gas identifiers and gas decontamination services should poison gas be used; and a communications service to provide messengers between the scene of an action and the various control and report centres.

All these services will be discussed in greater detail later on, but one point should be stressed here. I remarked at the beginning of this chapter that civil defence was protection of the civil population by its own effort. The organization of all the above services may, on paper, be admirable, but the whole scheme will break down if a sufficient number of citizens do not come forward in their individual capacity to offer their assistance, paid or unpaid, in one of these services. Certain standards of recruitment as regards numbers are laid down for each service in every city according to its population and destitution. So far, regrettably, recruitment in many cities in India has been far below the expected total or the bare minimum number required. It cannot, therefore, be too often repeated that if the individual citizen is not prepared to co-operate, no A.R.P. services can exist.

The functions of civil defence do not end here, however. There are many post-raid services which, if not already in existence, have to be organized. First of all, there is the hospital organization, which has to be greatly expanded to deal with all the casualties anticipated. Then arrangements have to be made for the recording of civilian war deaths, so that information to relatives regarding casualties can be dispensed as expeditiously as possible. Of even greater importance is the care of those persons whose houses have been destroyed in the raids; these will have to be fed and

housed and, in some cases, clothed. These arrangements will, obviously, have to be completed far in advance if they are to operate smoothly and meet all emergencies; they cannot be concluded impromptu after the raid. Another matter demanding attention will be compensation for injuries and war damages. This will have to be awarded in accordance with regular rules drawn up beforehand. If any bombs have landed and failed to explode, they will have to be dealt with by men specially trained for the purpose and, if necessary, the surrounding property will have to be evacuated. Finally, if buildings are severely damaged and their continued existence constitutes a threat to the safety of the public or surrounding buildings, they will have to be demolished.

It will be seen, therefore, that the scope of civil defence is very wide. Not only will many new services have to be created specially to meet the emergency, but many peace-time organizations, as already indicated, will have to be adapted to meet the new situation. Hospitals, for instance, must be enlarged. The Fire Brigade will be called upon to perform many and arduous duties in addition to the ones it normally performs in peace time. The police will have additional burdens thrust upon them, both at the time of a raid and immediately following it, and will also be responsible for dealing with any panic that might break out. The public utilities will also be working at full pressure, the electricity and gas concerns to repair any mains that may be broken, the telephone company to restore damaged lines, the waterworks to renovate pipes. While many ordinary businesses may find it expedient to close down for the duration of a raid, the public utilities will have to be constantly on the watch in case their services are required. Even the vaccination department of the municipality may have extra work thrust upon it in case the outbreak of any infectious disease is apprehended.

The city at peace and the city at war, therefore, are two entirely different entities. Each rely, to a limited extent, on the same public services, but the city at war has to call a vast number of additional services into being, and those already in existence are widened and keyed up to face any emergency. In peace time the citizen tends to take many of the amenities of everyday life for granted without troubling to think whence they come or of the organization behind their provision. When the city comes under fire, he realizes far more fully the debt under which he is placed to them for his ordinary comforts. The additional services that are called into being at such a time, the A.R.P. services proper and the various post-raid services, depend for their very existence on the support they receive from each and every citizen, for if the individual citizen is not willing to support them, they are unable to exist, for it is of the very essence of A.R.P. that it should be voluntary and not compulsory—at any rate in its earlier stages, for London's experience showed, after a time, that fire-watching and fire-fighting must be made compulsory if the fire menace was to be successfully overcome. In India, we may rest assured that compulsion will not be resorted to until voluntary methods have failed and it is impossible by such means to defend her cities. In time of war, therefore, or, rather, in the face of threat of direct attack, the citizen realizes far more than in times of peace the debt he individually owes to the community. It is in times of stress and times of crisis that one realizes the value of community living and of community harmony, for without them the individual is powerless against the common menace. It is essential, therefore, that at the outset each individual citizen should realize his individual responsibility with regard to civil defence of the community in which he lives.

CHAPTER II

THE CITY UNDER FIRE

Is there such a thing as complete protection against air attack? The experiences of the world during the past two years would indicate that no city that has not itself been under fire can fully profit from the lessons of others, although it can learn a certain amount by copying. The classic example, of course, is London. Although it had been anticipated that London would be reduced to a heap of ashes in the first week of war and that casualties would be on an astronomical scale, it was actually a full year before the Blitzkrieg burst forth with all its fury. In the meantime, other cities across the face of the Continent had been bombed, the most outstanding in the destruction caused being Warsaw and Rotterdam, to say nothing of the experiences of Madrid and Barcelona in the years before this war began. Yet the first few raids in London were horrible in their devastation, just as if these cities had provided few lessons which could be learned from them. It was London's own experiences which taught London her lessons—just how and where she could counter the enemy's onslaught the most effectively. Every city, of course, has its own local problems and its own local peculiarities, and these of necessity become intensified in times of crisis. It seems to be fairly well-established from the history of all the cities that have been bombarded that each city must learn its lesson from its own experience. This is not to say that no lesson can be learned from the experiences of others—undoubtedly the experiences of Barcelona assisted those who framed London's A.R.P.—but one can only discover local demands

and local necessities fully by the ancient principle of trial and error.

All this may sound very depressing, but it is not so in fact. History shows that the most destructive raids on any city are always the first. Thus the raids on Rangoon that caused the most havoc were the first two, in which hundreds of people lost their lives simply because they would not take cover but insisted on standing about in the streets and staring up at the sky. After people had realized that this was a sure way of asking for trouble, they began to take shelter as soon as the siren sounded, with the consequence that in the third and subsequent raids, casualties were relatively very slight indeed. The people of Rangoon had doubtless been told that in the early days the people of Chungking had stood staring about the streets and paid the penalty with their lives until they learned better, but Rangoon was not prepared to heed the awful warning of Chungking without herself suffering the same torments. Here, for instance, is what Edgar Snow has to record of the initial bombing of Chungking in his book *Scorched Earth*:

'For three days the Japanese subjected Chungking to the most mercilessly intensive bombing any city had yet suffered. They were Szechuan's first serious raids. Contemptuous of the danger, as folk always are before they have seen what a bomb can do, thousands idly exposed themselves to watch. Hundreds were killed in the streets or trapped behind walls of fire as one-twelfth of the city burned in two days. Most of the bombs detonated in the crowded commercial district where merchants and workers clustered in shops and buildings that fell apart like ripe melons.'

But even if one city is incapable wholly of assimilating the lesson of another, there are, at least, degrees of preparedness and unpreparedness. Rangoon, for instance, proved

the efficacy of slit trenches; it is said that nobody sheltering in a slit trench in Rangoon was injured in any of the early raids, except for one old woman who slipped while climbing in and slightly bruised herself. The consequence of this lesson is that slit trenches have been dug all over Calcutta, so that large numbers of her citizens can take shelter therein when the warning goes. The experience of Rangoon showed, again, that people felt more comfortable when enemy raiders were overhead if they had some kind of a cover above them; hence, whereas the earlier slit trenches in Calcutta were dug in open spaces, the ones dug later have mainly been placed in positions where there is protective covering from overhanging trees. A moral can, indeed, be pointed from every individual air raid; after it is over, it is possible to say 'Could such and such damage have been avoided if such and such precautions had been taken?' To revert once again to the example of London. It is now ancient history that the damage done in the early fire-raids when there was little or no roof-spotting for the outbreak of fires was enormous. Then, gradually, an organization for the purpose was built up until almost every roof in London had its spotters, and by the middle of 1941 the Minister of Home Security had so far perfected his system of fire-watching and fire-fighting that he was able to announce in triumph that London had little more to fear from raids by incendiaries. Sporadic outbreaks of fire there might be, it is true, and not all could be prevented, but the menace has been so far overcome that another major conflagration in London is virtually an impossibility. But although the cities of India have learned much of the system of fire control in force in London, it is too much to hope that incendiary bombs will not do as much damage here as elsewhere in the early raids, until India has evolved her own methods of dealing with them.

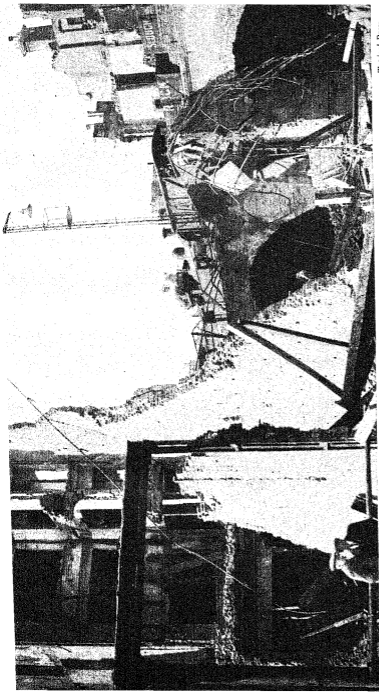
There are, of course, degrees of preparedness. Until the

actual raids occur, no city is prepared to meet them except in theory and on paper, and it is the actual experience which will test the effectiveness of the preparations. But if a scheme on paper has worked in practice with success elsewhere, there is more than a reasonable chance that it will be effective here also. Certain measures, of course, which are suitable for one part of the world are obviously unsuitable for others: to quote an extreme example, the deep underground shelters of London and Ramsgate, eighty feet beneath the earth's surface, provided by railway tunnels, could never be copied in Bengal where the nature of the subsoil is such that in many places one strikes water two feet below the ground. But this is an extreme example, and as a general rule it is safe for one city to copy what has been efficacious in another city and for the citizens of one city to adopt what citizens of another city have found practicable. In other words, practice makes perfect.

The havoc wrought in a city in an air raid does not, unfortunately, depend entirely on the efforts of its citizens to resist it. All that civil defence is concerned with is passive resistance—the active methods by which the attack is beaten off rests with the fighting forces, principally fighter planes and anti-aircraft guns. London, for instance, could never have been protected so effectively by the unaided efforts of her citizens, valiant as they were; the reason that more damage was not done depended, to a great extent, on the barrage put up by the defence when hostile aircraft approached. Similarly, Warsaw, Rotterdam and Belgrade met the fate they did, largely because the active defence they were able to put up was in no way comparable to the weight of hostile aircraft. But no attempt should be made to minimize what the citizens can do by their own unaided efforts. There is no doubt that Warsaw resisted as long as she did on account of the passive resistance of her citizens, even

though support in the air had sadly dwindled. Let no citizen think, therefore, that he can shirk his responsibility towards civil defence merely by reason of the strength of the active protection afforded by his country's aircraft and anti-aircraft barrage. However many fighter aircraft may fly over a city to protect it, however many its anti-aircraft guns, that is not going to prevent every bomb from falling should the enemy be determined to smash his way through. The havoc caused by these bombs, whether they be many or few in number, will depend in large measure on the steps the individual citizen has taken to protect himself, his property and his neighbours. Passive civil defence and active air defence are complementary to each other and are completely nullified if each does not receive the other's support.

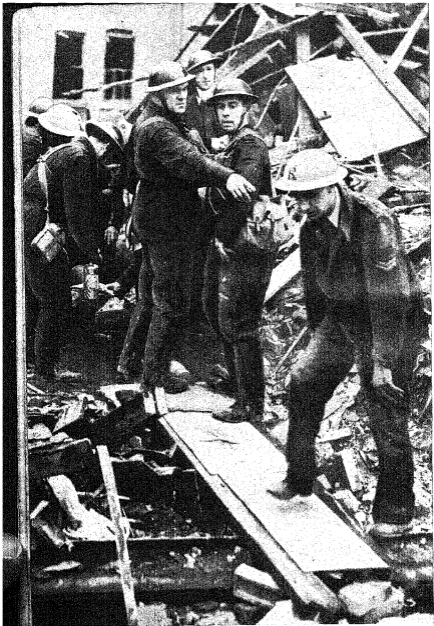
There are few countries now left in the world which have not received a taste of bombing by a hostile force. Great stretches have been laid bare, whole cities have, apparently, been laid to the ground—until one comes to examine the damage carefully in the cold light of day. Then one realizes that though there are gaps here and there in the city's fabric, the bulk of the city still remains standing. This is not only true of raids by small formations of enemy aeroplanes but of bombardments *en masse*. The Nazi raiders that came over London in September and October, 1940, could be counted in hundreds and not in tens, and although large numbers were brought down by the Royal Air Force and anti-aircraft guns, many hundreds more escaped, having let loose their cargo. Yet although whole streets of the East End have now disappeared, their former existence only marked by open spaces, it is said that there are many places where you can drive for many minutes without seeing a trace of damage at all. If the Londoners had merely held up their hands in despair when the first bombs began to drop and had taken no further part in their own defence, there is no doubt



Topical Press

CARRYING ON

The primary purpose of civil defence is to carry on—a goods train carrying essential materials crossing a bridge in a blitzed area in London



RESCUE

Rescue party at work, bringing out a last survivor after hours of weary labour at the wreckage. Rescue parties never cease operations until it is certain that everybody in a trapped building has been brought out, dead or alive

whatsoever that the damage would have been a thousandfold greater and London would indeed have ceased to exist except as a mass of smouldering ruins. When the enemy directs his attack on the restricted area of a city, it is on the individual's own personal possessions that he is aiming his fire. If, therefore, the individual shows no interest in the preservation of his own property, nobody else is likely to take much interest in its preservation either. Fortunately for mankind, the possessive instinct in the individual is strong and often uppermost and hence, if he sees his property in danger, he fights tooth and nail to preserve it. And having worked himself up to this pitch of enthusiasm, he very quickly realizes that he is not going to do much good by his own unaided effort and that the best means of resisting the attack is to organize resistance by banding together in groups of men and regular services. And in this way the various A.R.P. services, devised by higher authority, become a living reality, because men realize that it is to their own advantage to take such joint action. Recruitment to civil defence services may be fair before the raid (it varies greatly from city to city and country to country), but when the first raid is over there is apt to be a large rush of recruitment when people, faced with the reality, appreciate the value of these services. In India, in many parts, recruitment to the civil defence services has been poor. Is it too much to hope that it will profit by the experiences of others and make the maximum effort of recruitment before the raids instead of after them?

The two main types of bombs used for causing destruction amongst the enemy are incendiaries and high-explosives. The object of an attack with high-explosives is to cause damage, destruction and casualties and, in consequence, to break down the city's morale, particularly the morale of the civil population, and thus interfere in every possible way with the country's war effort. The object of incendiary

bombs is to cause a larger number of fires than can be dealt with by the regular Fire Brigades. Hence, if there are not volunteer groups of fire-fighters to assist the regular fire service, the general conflagration caused will be impossible to control. In addition, the object of both types of attack is to dislocate communications and supply arrangements.

In the early days of the present war, a distinction was, in theory, drawn between military and non-military objectives. The distinction, however, quickly faded out, as it became quite obvious that it was meaningless to the Nazis—and the Japanese, imitative as ever, have shown that it is meaningless to them also. After all, a large proportion of the civil population of any country at war are engaged in war production, communications or supply, and hence become themselves objects of attack. It would not be easy for any enemy to discriminate, however scrupulous he might be about the distinction between citizens engaged in war and those not engaged in such work, and so he is able to justify his onslaught on the whole civil population. No section of a population, therefore, under modern conditions of warfare, can possibly consider itself immune from attack from the air.

The enemy may resort to several different methods of pushing home his attack. The one perhaps most commonly employed is high-level bombing, from heights of 15,000 ft. and upwards, sighting instruments being employed to aim at the target. For its success, good visibility is required and also freedom from fighter interception; large formations have to be used for effective results. It is obvious, however, that bombing from such a height cannot produce accuracy of marksmanship, and this explains much apparently indiscriminate destruction—the fact that the enemy cannot take aim at his target properly. In contradistinction to this is low-level bombing which depends for its effectiveness on highly skilled personnel, surprise and weak ground defences,

but has as its reward greater accuracy of aim. Then again, there is the unpleasant phenomenon known as dive-bombing. This requires machines which can be easily manœuvred and also skilled and courageous personnel. This is probably the most successful method of attack, but it is also the most dangerous if the ground defences are strong. Lastly, for present purposes it will be sufficient to mention machine-gunning of civilian populations from low-flying aircraft instead of bombing them. This, naturally, can only be effective where the population has been unable, or has omitted, to take proper shelter.

A few figures may be of interest to the reader. The figures are for the years 1939-40 and improvements in every direction have, doubtless, been effected since then. In that year, the maximum speed for fighter aircraft was 400 m.p.h., the maximum height to which they could fly was 25,000 ft. and their maximum range of flight 200 miles. The corresponding figures for bombers were: speed 200 m.p.h., height 30,000 ft. and range 1500 miles, in addition to being able to carry a bomb-load of 8000 lb. The only advantage of the fighter, therefore, lies in its greater speed and manœuvrability, and the disadvantage of the bomber in the fact that if it undertakes a long flight it cannot yet be escorted by the fighter to protect it. Also, the figures of maximum performance can only be obtained at the expense of other factors—for instance, the greatest height can only be obtained at the expense of speed and load. Maintenance is another factor to be considered, machines used for long-distance raids requiring more frequent overhaul than those used for short-distance ones.

In modern warfare, therefore, the city is in every way as vulnerable to attack from the air as the army in the field. Distinctions between combatant and non-combatant as well as between civilian and military objectives completely

disappear, and every city within range of the enemy's aircraft must face up to the fact that sooner or later it may become an object of attack. How far it will be able to resist that attack, how far the attack will be nullified, will depend partly on the efficiency of the A.R.P. organization in addition to the military ground defences, but even more on the will and spirit and determination to resist and co-operate of every member of the civil population. Without effective harmony between all sections of that population no resistance worth the name is possible.

CHAPTER III

THE CITIZEN UNDER FIRE

IN the last chapter we considered the city under fire. Let us, in this, take a look at how the individual himself reacts, on the logical assumption that a city is a collection of individuals. After all, it is the individual reactions which are of importance, for however strong a city's defences may be to outward appearance, if as a collection of individuals it is unable to stand up to the strain of bombardment, its fate is settled.

Fortunately for most of the cities so far subjected to bombardment, civil populations have shown that they are fully capable of 'taking it', to an extent that could scarcely have entered into the enemy's calculations. Countries as diverse as Spain, Poland, England and China have demonstrated this to the hilt. In Warsaw, for instance, after several days of terrific bombardment in September 1939, the cinemas and theatres, which had closed their doors under the first shock of the attack, opened them again and played their performances just as if peace were reigning everywhere. Then, again, this story quoted by Mr Henry Klemmer in his admirable book, *They'll Never Quit*, is hard to beat:

'The gem of the war, as far as I am concerned, is the crack allegedly made by an old lady one night when planes were coming over at the rate of one a minute, and bombs were falling like confetti. The old lady looked casually at the sky:

"That 'itler," she cackled, "e sure do be a fidget."

Although the majority of people are probably unable to attain this pitch of philosophy under the strain of an air

attack, this story is symptomatic of the way thousands have reacted. It is, perhaps, the peculiar characteristic of the Cockney to make light of trouble, but the story can be paralleled from many other sources as well. Miss Winifred Galbraith in her book, *Men Against the Sky*, which anybody interested in the Sino-Japanese struggle should not fail to read, says:—'After a year of war, inland Chinese cities had become strangely accustomed to air raids and had learned to reckon with bombing as a calculable factor in social and economic life.' And she continues: 'In "Free China", men fear air raids and the approach of the enemy, they fear greatly poverty and bandits and death. But fear of air raids is an exhilarating, if unsettling, preoccupation; anything may happen at any time, one cannot possibly prepare for it, so take the short view and leave the future.'

One of her most delightful stories is of the peasant who, when his wife died, bought a pig, to which he showed a devotion almost equal to that he had bestowed on his late spouse. One day his hovel was bombed, but the pig, wondrous to relate, though buried in the debris, was unharmed:

'Then the business of living, obliterated for so short a space by the wings of death, pressed on him once more. He had better look at the marrows.

'He hobbled off towards the marrow patch. The force of the explosion had swept like a fire over the bed. The leaves were burnt and wrinkled and some of the great golden vegetables were split open and half cooked by the heat. Others were only slightly cracked or torn off the stalk and uninjured. Wang Wen pattered up and down the rows picking up the broken ones which could be dried in the sun for the winter and counting those which could be taken in to market the next day for immediate sale.

'He reckoned up his losses; the house could be rebuilt, with the money from the marrows he could buy new crockery. He had lived so long on the margin of nothing that the destruction of all his possessions hardly made any difference.

'And against the loss his heart was singing at the tremendous gain, as it seemed to him, that he had not lost his pig.'

Such quiet philosophy could be repeated, a thousand times, from all quarters of the world that have been under fire.

Bombing, indeed, very often has the opposite effect from that intended by the enemy—instead of destroying morale, it builds it up. In Warsaw, for instance, on September 8th 1939, the Mayor, Stefan Starzynski, 'appealed for volunteers to help in constructing defences for the city. Within half an hour, 150,000 men and women were at work. Warsaw is preparing to defend herself. The population remains calm and resolute.'¹ And then again, on September 21st, when the bombardment had increased very considerably: 'The Warsaw newspapers are being published normally, though in a much smaller size. The new newspaper boys, lads of fourteen to sixteen, go on selling the papers even during the raids, and many of them are hit. The people of Warsaw are growing as much accustomed to the air raids as to the artillery bombardment, which is much harder to bear, and they do not let it interfere with their daily work.'

Edgar Snow in *Scorched Earth* has much the same tale to tell of Chungking:

'Many people lived through all the raids without even one narrow escape. Among the populace as a whole morale was improving daily. It was already

¹ *Two Septembers* (Allen and Unwin).

clear that this capital, on which Japan has now made scores of raids and rained tens of thousands of high explosive and incendiary bombs, could not in this way be broken in spirit.

'Japan first struck at Chungking in May 1939, shortly after the winter mists and clouds parted to reveal the city's hiding-place, at a moment when hope was lowest. The city had no defending air force and only a few anti-aircraft guns. . . . Nearly half a million people fled, business ceased, all city services were broken, and the cabinet considered moving further west. Then the Japanese abruptly stopped coming. Why? Evidently they believed that they had, as they boasted, "wiped out Chungking" just as they thought they had "destroyed the Chinese army" after the occupation of Nanking.

'But in the breathing spell the Japanese unaccountably gave Chungking the city government was reorganized, hundreds of new shelters and dugouts were blasted from the rock, efficient clean-up and rescue squads were organized, fire-lanes were cut through the most congested parts and Government offices and headquarters were shifted to suburbs scattered over a wide area. By the time I returned from a long trip to the north, Chungking had become perhaps the strongest war-time capital in the world. Built on solid sandstone, high above the river, deep shelters were easily constructed to give security against the heaviest bombs. The tragedy was, of course, that it could have been made so from the beginning—but the Chinese seldom cross a bridge before it comes to them.'

The heroism of a city is, inevitably, the result of the heroism of the individual—not only the heroism of the various civil defence services but the heroism of the ordinary man in the street, who would probably have a rude shock to find himself described as a hero. So many stories have been told of the heroism of the individual during the course of the blitz over England that it is unnecessary to recount

them here—the spate of books on the subject published during the last eighteen months is eloquence enough. Each incident brings its own opportunity for heroism, and the opportunity is rarely lost. And by heroism, I do not necessarily mean dashing into blazing houses and bringing out trapped persons alive or crawling through tunnels to dig them out or serving as members of a ‘suicide squad’ to deal with an unexploded bomb, but the quiet courage that demands almost as much determined effort—the conquest of personal prejudices in the supreme necessity of helping one’s fellow-men whoever they may be. For a crisis is no respecter of persons, and in moments of danger men really do become brothers. It was a topic of universal comment in England that class distinctions lost all meaning in the early days of the blitz.

Even more than in the last war, the individual has almost made a fetish of ‘carrying on as usual’ under the stress of bombardment. This is especially true of the worst-hit cities such as London and Coventry, but there are parallel examples from all other countries which have experienced the blitz. The Cockney’s habit of retorting to Hitler with a message of defiance chalked up on his wrecked premises is by this time famous—(the chain-store, for instance, which announced triumphantly on its battered panes: ‘We may be in a bit of a mess but you should just see our Hamburg Branch’); and, in fact, this seems the only way of facing up to such a situation. The English, perhaps, have a genius for understatement in difficult moments; witness the case of the postman who went dutifully from crater to crater after the strafing of Coventry and merely scribbled ‘Gone Away’ on each envelope.

For sheer resilience however, it is hard to beat the story recounted by Miss Joy Homer in her book, *Dawn Watch in China*. The scene is the town of Kweilin, the morning

after a more than usually savage fire-raid by the Japanese had almost blotted out the entire city:

'Across the middle of a devastated street that had been completely gutted on either side we saw a crew of workmen digging a ditch.

"Please, may I ask," said the Skipper, using as he always did the politest possible language to the coolie, "What is this that you are digging?"

The man smiled.

"It is a water-main, Hsien-sheng."

Skipper looked puzzled.

"But why a water-main here?" he asked then. "What good will it do? The houses on either side are burned."

"But don't you see, Hsien-sheng," they said gently, as to a nice but stupid child, "this is to supply the fireproof houses we are putting up here next month."

It is an ancient truism that it is adversity that proves the philosopher, and never is this more so than in times of air raids. As long as the individual's morale holds out and, of course, provided he does not himself become a casualty, his power to resist should be limitless, and when this resistance of a multitude of individuals is taken into consideration, it can readily be seen that the city where individual civil defence is so well organized will be in a very strong position indeed. This, of course, is on the assumption that the more active forms of its defence are potent and that it can succeed in actually foiling a fair proportion of the raiders before they drop their bombs.

What, in fact, is it which causes surrender in modern warfare? Fighting to the last man is, after all, only a poetic phrase, the actual performance of which can rarely have been seen in the world's history. Provided no positive factor intervenes, such as the destruction of the water-supply, it will usually be found that surrender only comes when morale snaps. It has often been stated that in the last

World War the German Army was not really defeated in the field; what caused the Armistice was the fact that morale, both civilian and military, had come to the end of its tether. The preservation of morale, therefore, is every bit as important from the point of view of civil defence as the more active measures which are generally grouped together under the phrase A.R.P. We shall have further opportunities of discussing the preservation of morale later on in this book. For the present, it would be a good idea for everybody to read some, at any rate, of the numerous accounts that have now appeared in print of the experiences of other cities under fire. Whatever one's reactions, whether they be of pity or of horror, one fact cannot help standing out—the ability of the ordinary man in the street to stick it when he has to. His resilience, in fact, has startled even the most optimistic observers. Nor has such resilience been confined to those who by their education and environment should have been better schooled in the ways of philosophy, for the working-man has shown himself second to none in his courage. 'Britain Can Take It', 'London Can Take It', have become catchwords in the English language; other parts of the world have proved that the phrase is equally applicable to them, even though not applied in so many words. It remains to be seen whether, under the present emergency now facing this Continent, the phrase 'India Can Take It' will be equally accurate. From the conduct of other peoples of the earth, Eastern and Western, there is no reason to suppose that it will not.

CHAPTER IV

CIVIL DEFENCE FOR THE CITIZEN

CIVIL defence may be considered from two angles, as an individual duty and as an organization. The two, of course, are closely inter-related, for without volunteers an organization breaks down, and however desirous an individual may be to offer his services, his offer will be unrewarded and his enthusiasm crushed if there is no efficient organization to which he can apply. In addition there is much that the individual citizen can do to help himself and to help his fellow men without being a member of any organization or in addition to the work he does on behalf of an organization. All these aspects will be considered in this and the following chapters.

To deal first with the A.R.P. services proper. In any A.R.P. organization, the services are run on the same lines and are split up into appreciably the same subdivisions. There are five main groups of service within the scheme—the wardens service, the communications service, the rescue service, the casualties service and the fire-fighting service, and these, in their turn, may be subdivided into other services. Work can be either paid or voluntary. In England by far the major part of A.R.P. work is done on a voluntary basis, and paid executive staff is a comparative rarity—the town that has to pay more than a certain proportion of its wardens, for instance, views it as a matter of shame. For various reasons, this standard of perfection has not been reached in India. The general rule is that fifty per cent of our services are recruited on a paid basis, but hitherto the response to the appeal for voluntary workers has not been

great. There appear to be two main reasons for this. Firstly, those who can afford to work on a voluntary basis are probably fully occupied with their own means of livelihood and have not got the necessary time to devote themselves to A.R.P. work. (It should be remembered, however, that in England London's fire-watchers and fire-fighters by night were London's workers by day.) Secondly, there appears to be a kind of vague snobbery or prejudice against people recruited on a paid basis. It is assumed that they are unemployed young men simply taking on this job for want of finding anything better, that they are ill-educated and with little influence in their localities; the better-educated men, therefore, who already have jobs and might otherwise volunteer their services, hesitate to do so because they feel that they are lowering themselves. This appears to be a totally unreasonable attitude to adopt. At a time of crisis, it is essential that all should pull their weight together if the crisis is to be averted. It is no time to quibble over petty class distinctions, and if a man is really sincere in his desire to serve his community he should have no qualms about serving in a capacity inferior to someone whose educational qualifications are slightly less than his own. Social prejudice, it must regrettably be confessed, has played a large part up till now in the fact that recruiting to A.R.P. has been far below the desired standard. In England, there have been the most curious social juxtapositions in A.R.P. personnel, but efficiency has been in no way lessened on that account. If, therefore, would-be recruits can eradicate this initial prejudice from their minds, there is no reason why the voluntary services should not be as fully-manned as the paid ones.

There is, indeed, such a variety of service open to recruitment that everybody ought to be able to find something suited to his own particular temperament. Certain services

obviously call for specialized training; in the rescue service, for instance, volunteers are normally only recruited from amongst those with experience of handling tackle and lifting weights. Officers in charge of First Aid posts, in the casualty service, must be fully-trained doctors. But apart from these limitations, everybody ought to be able to find something suitable for himself after some preliminary training has been undergone.

The wardens service is the one that most readily springs to mind when the term A.R.P. is mentioned, and it is indeed the pivot of the whole organization, for it is the warden who is the link between the A.R.P. executive authorities and the general public. He is, however, considerably more than a liaison officer, for in addition to being an essential component of the organization he is also expected to be acquainted with every householder in his sector and to advise him on all problems that may arise in connexion with A.R.P. There is a twofold purpose in this latter duty; not only must he know who are the people likely to require his assistance in a time of emergency, but he must also know which are the particular people in his sector to rely on to help him should the need arise. Of almost greater importance, the warden must be familiar with every detail in his sector, must know where hydrants are situated, telephones are to be found, which buildings can be considered safe as shelters and so on. He should also know the danger-spots and points of particular importance, such as petrol pumps, factories or timber-yards. All this information will be of vital importance when the other A.R.P. services, such as the casualty service or rescue parties, come into action, for as the members of these parties probably do not live on the spot, they cannot be expected to have as accurate a knowledge of the locality as the warden and, therefore, if an air raid 'incident' is a minor one and not calling for the aid of a specialized

officer, the warden will be the best person to co-ordinate activities. Another matter of importance to which he must give his attention is that he must know the probable number of occupants of every building in his sector at any given time of the day or night, and where they propose to take shelter in the event of an air raid. The object of this is that if an air raid occurs in his sector, he will not have to waste unnecessary time looking for people who are elsewhere at that particular time and will be able to rush aid to the spot where he knows that people will be congregated for certain. Over and above all this, he should collect as many volunteers as possible in the sector to help him in an emergency.

All these steps should be taken by a warden before the raids begin. He will be a busy man after the air raid warning has been given. It will be his duty to clear the streets and force the public to take shelter and to act as general assistant to the police in allaying panic. If any damage is caused in his sector, it is his duty to report it at once by express message to his local report centre, giving in outline the nature of the damage and whether or not human casualties are to be expected. He will send a more detailed message later, when he has had time to assess the casualties and damage more accurately. It will, naturally, also be the warden who will send the first information to the Fire Brigade should a fire break out.

It will thus be seen that the duties of a warden are many and onerous, and to discharge such duties efficiently he must be possessed of certain qualities of character. These may be enumerated as reliability, responsibility, respectability, coolness and tact, and he should in addition be a man of education and ability, and the more local influence he possesses the better, so that he can obtain willing co-operation from all his neighbours. Lastly, it should be added that a warden is expected to have a good knowledge of the working

of all the other A.R.P. services and must be proficient in such elementary features of these precautions as the control of incendiary bombs by means of stirrup-pumps or sandbags.

The next organized service we will consider is the Rescue Service. In a densely populated area, casualties may be expected to be heavy, especially if high-explosive bombs are used. Many of the casualties are likely to be trapped beneath the debris of buildings, and the task of rescuing them will devolve upon men specially trained for the purpose. There are two kinds of rescue parties, light and heavy, and both kinds consist for the most part of skilled workers accustomed to handling heavy material and using mechanical equipment, such as steel erectors, dockyard *khalasis*, carpenters, electricians, welders and scaffolders. Rescue parties also include men equipped and trained to administer first aid. Light rescue parties go out when the first express message regarding trapped casualties is received from the warden; heavy parties only go out later or when large and solidly-constructed buildings are involved. Such parties are not concerned with the demolition of buildings except in so far as they have to deal with dangerous situations demanding immediate attention. The primary task of rescue parties is to rescue living persons who may be trapped in the wreckage, though on them also devolves the task of removing dead bodies. It is a work that calls for the greatest amount of skill, for if debris is carelessly dislodged, fresh casualties may be caused or casualties trapped beneath the debris may be crushed and killed.

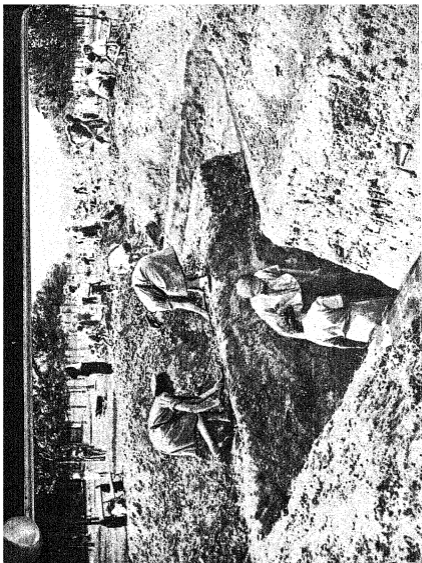
Next come the various casualty services, usually divided into three divisions—Ambulances, First Aid Posts and First Aid Parties. We will deal with first aid parties first, as they will be the first persons to deal with casualties, at the actual scene of an incident. Their object is to render first aid on the spot, so as to save life and prepare badly-injured persons



WARNING!

Statesman

The way *not* to take shelter when the air raid warning goes. The persons standing in the doorways and verandahs are asking for trouble when the bombs begin to fall. Fortunately, it is only a practice alert



Planet News, Ltd.

ALL CAN HELP

In Warsaw, young girls and children helped to dig slit trenches. There is a part for all to play in civil defence

for removal to hospital or first aid posts. In addition to the active work of medical treatment, they are designed, by their speedy action, to have a favourable moral effect on the public. Nothing beyond the immediate essential attention is given by these parties, for the casualty will be far more comfortable if removed to a place where he can get proper shelter.

To supplement the work of first aid parties at the scene of an incident, ambulances and sitting-case cars are provided. These also call for volunteers, both as drivers and as attendants and stretcher-bearers. Injured persons are grouped according to the severity of their injuries. Anybody able to proceed to the first aid post under his own motive power will be compelled to do so; minor casualties will be placed in the cars, and casualties requiring a stretcher in the ambulances.

Last in the scheme of casualty services come first aid posts. These are intended to supersede the work of the ordinary hospitals for all minor cases of injury. If an air raid takes place on at all a heavy scale, it is probable that the hospitals will be filled to capacity or even to overflowing. If minor cases of injury were accepted therein, it might mean that more serious cases would have to be turned away. An efficiently organized A.R.P. service, therefore, will ensure that no lightly wounded person will be allowed into the hospitals, but will instead receive treatment at a first aid post and then sent on his way home. An elaborate system of tickets is normally introduced, one of which is given to a casualty at the scene of an incident; the colour of the ticket denotes the severity of the injury, and whether the patient is to be dispatched to hospital, a first aid post or straightaway home; in this way, much unnecessary congestion at hospitals is avoided. Doctors and nurses are required in large numbers to make such posts effective.

Another important service is the Communications or Messenger Service. The object of this is to provide alternative means of communication if telephonic communication breaks down and to provide means of communication where telephones do not exist. These messengers, according to their distribution, will operate between wardens posts and first aid posts and chief air raid wardens' headquarters, and also between the control centres and depots where the various relief services are stationed. Bicycles, motor-cycles and motor cars may all be employed as methods of transport, but the experience of England has shown that the bicycle is the most universally satisfactory, as it is able to penetrate to areas banned to the heavier vehicles—not only to narrow lanes but also to bigger roads partially obstructed by debris. It is scarcely necessary to add that volunteers able to provide their own vehicles are especially welcome in this service.

The last service which arises for consideration under the A.R.P. organization is the street fire-fighting service, whatever form it may take in any particular area. Its name in Bengal, for instance, has now been altered by notification to House Protection Fire Parties. These, as their name indicates, are intended to supplement the work of the regular Fire Brigade. Fire plays a twofold part in an enemy attack—it damages property and it intimidates the civilian population. An incendiary bomb attack in force will cause more fires than can be dealt with by the ordinary Fire Brigade and will thus cause severe dislocation, together, possibly, with panic. A secondary object of such an attack at night is to make objectives visible to planes following in the wake of the first wave of bombers and thus negative the effectiveness of the black-out. To expand the Fire Brigade to sufficient strength to meet such a menace, together with the supply of all the additional equipment necessary, would obviously be beyond the capacity of any municipality or other corporate body. The regular

Fire Brigade, therefore, will at such times only be able to concentrate on major fires, even if, as in Calcutta and Bombay, its peace-time strength and equipment have been enormously expanded.

It follows, therefore, that in the event of such an attack on a large scale, the Fire Brigade will not be able to cope with all demands made on it simultaneously. It will, therefore, be forced to neglect the fires of lesser importance in order to concentrate on the more important ones. But unless there is another organization to cope with the small fires, they themselves in their turn may grow into bigger ones. It is with this end in view that street fire-fighting parties are organized. Their object is twofold—to deal completely by means of their stirrup-pumps with all lesser fires, and to endeavour to control bigger ones until the Fire Brigade can reach the spot. In a city where the fire-fighting service is properly organized, there should be such parties in every street, who will be able to reach the scene of occurrence much more quickly than the Fire Brigade can, and much good work may be done in the few vital minutes before its arrival. It is the normal practice, therefore, for each party to work in the immediate locality from which it is recruited; such volunteers can be expected to know details of their own locality intimately and they will also be motivated by the desire to save their own possessions should fire break out in that area. In Calcutta, for instance, it has been found that recruitment has been far more spontaneous since it was decided that the organization should consist of groups of three men banding themselves together to protect their own immediate neighbourhood rather than that volunteers should be required, as formerly, to work over a relatively wide area. Normally, of course, each stirrup-pump will require two or three separate parties of three to work it, as it would be unreasonable to expect any one party to be on

duty through the twenty-four hours of the day. By contrast with the other A.R.P. services in India, these fire-fighting parties are entirely unpaid and voluntary.

These are the A.R.P. services open to the ordinary citizen for enrolment. If a gas attack threatens, gas decontamination squads are also likely to be formed, in which his offer of co-operation will be welcome. There are many other services which may be called into action at the time of a raid, in some of which, such as the Auxiliary Fire Service, the private citizen can enrol. But for the most part they will be existing services expanded to a war-time basis or specialized activities handed over to select bodies of men. Thus, all the public utilities will have to be alert in case gas or electric mains, water pipes or telephone lines have to be repaired; but in each case the municipality or the company, as the case may be, will have its own repair squads ready to deal with the situation, and the ordinary citizen could only assist by enlisting his name as an employee of the company. Similarly with unexploded bombs; to deal with them effectively requires skill and experience as well as courage, and in India the disposal of them will be the concern of the military. Again, heavy demolition of buildings is a task which must of necessity be entrusted to experts at the job.

There are, however, a number of other ways in which the individual citizen can assist if he wishes, without joining one of the regular A.R.P. services. He may, instead, choose to be a member of the Civic Guard whose function is to be a sort of assistant to the regular police and which, in fact, has taken over many of the minor duties of the police in several areas of India. It might, indeed, be as well to consider the additional burdens placed on the police at a time of emergency such as the present. It is their duty to patrol the whole of their sectors when the air raid warning goes to compel people to take cover, and immediately the 'raiders

passed' signal has gone they will also have to patrol around, controlling panic and assisting at any 'incidents'. It is their business to prevent looting, and they are armed with drastic powers to do so. If houses have to be evacuated on account of unexploded bombs, it will devolve upon the police to give the necessary warning to the residents, and they will be responsible, as far as lies within their capacity, for the protection of property in houses which have had to be abandoned, until the salvage officers take charge. The police at times such as these should prove themselves the real friends of the public rather than the conventional villains portrayed in a certain section of the contemporary press and contemporary politics.

If an air raid causes severe damage to property, there will be people to be fed and people to be housed, and relief centres are likely to be opened all over the city to accommodate them. The control of these centres will normally devolve upon the Corporation or municipality, assisted, where necessary, by the Government, but there is plenty of scope here for assistance by the individual, handing round dishes of hot rice or distributing old clothes for which he has no further use, if nothing else. It is, in fact, to be expected that many non-official charitable bodies will come forward at times such as these to render what assistance they can, for when relief has to be provided, there is rarely a superfluity of it. In this connexion, disappointment has been expressed in some quarters at the apparent cold-shouldering of non-official offers of co-operation in A.R.P. and relief measures. The reason is not that non-official help is unwelcome; this is far from the case, as there is always room for voluntary workers in a time of crisis. They will be fully welcome provided they agree to work together under a unified official command and do not insist on working in parallel organizations refusing to take orders from the official one. History has proved that a

divided command can never be successful. In the last World War, for instance, success only greeted the allied cause when the French and English High Commands were united under the single leadership of Marshal Foch: before that, there had been perpetual cases of conflict between the two commands. Similarly with A.R.P. and Civil Defence. If there is more than one parallel organization, however well-intentioned each may be and however well-disposed towards the other, there is certain to be confusion somewhere, and, therefore, unless they have rigidly separate spheres of influence and activity, it is essential that they should be united under one single joint command.

Anybody desirous of joining any of the A.R.P. services will have to undergo a course of training before he can consider himself qualified. In its elementary stage, the training is identical for all the services. This consists of elementary instruction, in the principles of A.R.P., the different types of bomb and methods of control, and simple principles of first aid. The recruit then proceeds to more specialized training in the service in which he has enrolled himself; the would-be warden, for instance, must be practised in the writing of messages, and the member of a rescue party in the principles of lifting debris and tunnelling. In addition to this, there are three stages in the training of every recruit; he must first receive training by himself, then as a member of the team or unit in which he will work, and then, finally, he and his unit will be given combined training with units from other services. The object of the last two stages is, firstly, that the individual shall learn to co-operate with his fellow-workers so that each learns how to carry out his appointed task and, secondly, that each team shall know something of the functions and routine of the other services so that they can combine together smoothly at the time of an 'incident'. The function of the rescue party, for instance,

is to save people trapped in buildings and the function of the first aid party is to give them immediate medical attention: it is obvious that if the two parties are accustomed to working together, they will be able to accomplish their own work far more smoothly and efficiently. The total time taken for training for the different services, including anti-gas measures, varies from twenty-seven to thirty-six hours.

Before passing on to the consideration of what the individual can do in his private capacity, there are two further aspects of civil defence after the raiders have passed which deserve attention, both of them designed for the benefit of the citizen. Firstly, it will be the duty of the authorities to inaugurate a system whereby accurate information can be dispensed as early as possible, both regarding the actual damage done and regarding the whereabouts and safety of individual citizens. With this end in view, information bureaux are likely to be established in every large city which will collate news at regular intervals and impart it to all inquirers.

The second item worth notice is the Government of India War Injuries Scheme, 1942. This scheme provides compensation for war service injuries sustained by civil defence volunteers and for war injuries sustained by persons earning their own living and any other class of person notified by the Central Government; it also provides for compensation for war injuries resulting in death sustained by a person substantially dependent for his livelihood on a pension, annuity or other income ceasing with his death. The scheme makes provision both for temporary allowances and for disability pensions. Temporary allowances are payable to persons incapacitated for a period not less than seven days and up to a period of six months. Payment is made bi-monthly at the rate of Rs. 18 per month if the relief is to be granted on the higher scale, and at the rate of Rs. 13-8

per month if it is granted on the ordinary scale. Relief is granted on the higher scale to civil defence volunteers where the injury is sustained during the course of the performance of their duties and also to all other persons who are compelled by Government order to be present at the locality where the injury was occasioned. The same distinction is made in the case of disability pensions, which are granted when serious and prolonged disablement is caused, the scale of payment varying according to the percentage of disablement, standards for which are laid down in the schedule to the scheme. These vary from Rs. 18 to Rs. 8 per month in case of persons entitled to the higher scale of relief and from Rs. 13-8 to Rs. 6 for others. Where disablement is permanent, the Claims Officer can award a pension for life. Pensions and allowances are also payable to the dependants of a person who dies as the result of a qualifying injury.

Awards under the scheme are not payable to persons who have refused medical attention, because by their own negligence they have contributed to the gravity of their injuries. It is, therefore, essential in his own interest that anybody injured in an air raid 'incident' should present himself for treatment at the nearest first aid post or, if he is seriously injured, at a hospital, in both of which places full details regarding his injuries will be recorded. These details can be used as evidence when he comes to lodge his claim for compensation, and if he fails to take such treatment, he may be hard put to it to establish that his injuries were caused in the manner he alleges. Claims Officers to deal with claims arising under this scheme will be appointed in all cities likely to be subject to air raids, particularly in industrial areas, so that the workman and labourer can register their claims without difficulty and expense. A supplementary scheme for compensation has been drawn up to meet the special needs of Bombay Province.

It will be readily seen, therefore, that the organization of civil defence is a complex one, calling for many different types of work and many different types of workers. Unless recruitment is spontaneous, the organization cannot be a success. It is the duty, therefore, of every citizen, both in his own interest and as a member of a civilized community, to play his part in making the organization as strong and well-manned as possible.

CHAPTER V

CIVIL DEFENCE BY THE CITIZEN

EVEN if the citizen feels himself unable or unwilling to join in any organized A.R.P. service or measure for civil defence, there are plenty of ways in which he can assist himself, his family and his neighbours. Each household should, in fact, be a self-contained A.R.P. unit on its own. The first step each householder should take is to make quite sure that he knows who his local air raid warden is. It should be his duty to seek out his warden and not the warden's to seek out him. It should be remembered that the warden is a very busy man and will find it hard to know everybody in his sector if he has to go round from house to house and ferret them out. On the other hand, if each individual householder makes a point of approaching his warden, the warden's task will be very greatly simplified.

The warden's job will be still further simplified if he knows exactly how many persons are to be found in any particular house and at which hours of the day they are likely to be found there. This is not idle curiosity on the warden's part. If a high-explosive bomb should land in his sector and houses be demolished, it is probable that people will have been buried alive under the debris. When the rescue party comes along to extricate them, it will be the warden's duty to tell them the best method of approach. If he knows that, say, six persons are normally inside the house at that particular time, he will be able to advise the rescue party not to abandon operations until six persons, dead or alive, have been brought out. The rescue party will, of course, be still further assisted if there is one member of the

household itself able to give information of the exact numbers inside and also information regarding the house's structure. It should be remembered that digging in debris, where one storey has collapsed on top of another, often has to be done in total darkness, and unless the rescue party knows the direction in which it should proceed and where open spaces are likely to be found, its work will be greatly hampered. In rescue operations in England, for instance, much valuable time was saved by knowledge of the exact position of the doorways and arrangement of furniture in a room, even though the doorways and furniture were little more than fragments of dust. But it may well be that there is no survivor available outside the building, and then the warden will have to act on his own personal knowledge. The only way he can do this is if every household supplies him with a list of persons normally resident in the house, men, women and children, and the times of day they can be found there. The list should be kept constantly up to date and the warden informed of all arrivals and departures. If the family intends to shelter outside the house at the time of a raid, the warden should be informed of this also—it is obviously a waste of time to dig for six people supposed to be buried under debris if they are safe and sound the whole time in a public shelter.

It is also essential that the household should have complete confidence in its warden and be prepared to obey his instructions, both before and after a raid. An air raid warden has not the time to issue orders in a spirit of mere officiousness, and it can be safely assumed that he will only issue those which are absolutely necessary. The same applies to orders given by members of the Civic Guard. If they tell you to put out your lights, it is so that they may not become visible to the enemy firstly, and secondly, that you yourself

may be saved from the pains and penalties of infringement of the lighting restrictions.

If he is wise, however, the householder will minimize the risk of damage to his own property by observing the simple instructions issued by the authorities. To start off with lighting restrictions. India has not yet known a total black-out in the sense that cities of England have been observing it since the outbreak of the war. In India, total black-out will only be enforced after the air raid warning has actually sounded. In the meantime, all householders are compelled to observe what is known as partial obscuration, but it is a term which is apparently difficult of exact definition, to judge by the different standards which can be found adopted all over a big city such as Calcutta. Even as late as the date of writing (March, 1942), there are still many householders for whom, to all intents and purposes, the lighting restrictions might never have been passed, to judge by the blaze of glory that streams forth from their windows without any pretence at screening or shuttering. Others, again, keep the shutters closed and then, in a moment of inadvertence, throw them wide open so that the interior is visible to all and sundry. It should be remembered that the glow or reflection of a city's lights are visible a long way off in the air, and unless every single householder co-operates with the authorities in this matter, he is materially assisting the enemy. An effective partial black-out is an easy enough affair, even without disturbing one's own comfort in reading or working. There is therefore no excuse for its not being faithfully observed by everybody and it should also be ensured, before the raiders actually arrive, that it is possible to convert the partial black-out into a total one should the need arise.

The saying that every man's house is his castle is an ancient one, designed to apply to circumstances other than

the present. But for A.R.P. purposes it is most essential that a man's house should be a castle in the medieval sense of fortress—a fortress equipped to resist attack from the air and as nearly impregnable as man's defence can make it. It should, indeed, be impregnable except from direct assault, which in modern bombing parlance means a direct hit by a high-explosive bomb. No building so far devised can resist the penetrative power of a high-explosive bomb, though in the case of buildings with steel frames no bombs have so far been known to penetrate more than three floors. A hit is considered to be direct if it lands anywhere within fifty-feet of a building, in which case the building will be liable to the mysterious phenomenon known as blast, the exact occasioning of which has not been fully determined. Apart from a direct hit, however, the householder can and should guarantee to himself a reasonably high percentage of protection.

First as to protection of the building itself, and to begin right away with the most fragile substance of all—glass. Glass is highly liable to shattering as a result of an explosion anywhere in the neighbourhood—a bomb landing at a distance of two miles has been known to break all the windows of a house even though the windows next door may be untouched, and consequently it is of considerable danger to people sheltering inside the house. It is not the big pieces of broken glass that do the damage, but splinters, irritating fragments which fly about everywhere and are far more dangerous, because more penetrative and jagged, than clean breaks. It should be clearly understood that nothing is going to prevent glass from breaking if high-explosive bombs fall, but it is possible to do a certain amount to prevent it splintering. The only really safe method, of course, is to remove all glass from the house completely, but that is probably too drastic a method for most people, who wish to preserve a semblance of the amenities of civilization. Failing this, there are a variety of

other methods one can resort to. Firstly, there are a number of materials which can be fixed directly on to the glass and pasted all over it. Any cotton or linen textile specially treated against the weather will be suitable for the purpose—cheese-cloth or butter-muslin is the commonest employed. Thick brown paper is equally efficacious, or cardboard, but the paper must be thick. The important points to remember are that the material selected must not only be fixed to the glass itself but must extend to cover the surrounding wood-work, and that the adhesive chosen should not become brittle when it dries. Strips of sticking-plaster or brown paper may also be applied criss-cross over the glass, but are not nearly so effective. The other method is to fix materials of the nature of wire-netting of half-an-inch mesh as close to the glass as possible, either by means of an independent frame or by fixing it direct to the framework. The advantage of this method is that the wire will also serve to keep out incendiary bombs. It is also possible to fix certain substitutes for glass, such as cellulose, but they may be difficult to obtain under wartime conditions. If the glass is removed altogether and another material, such as wood, substituted, care should be taken that it is impervious to damp and that it will not become warped under exposure to the sun. At the time of a raid, the shock effect on glass will be lessened if all windows are kept open and all doors closed.

Having protected all glass in the house, the next point to consider is where one will take shelter in the event of an air raid. Pucca buildings in India can usually be considered strong enough to make a refuge-room inside them, and thus one can save oneself the inconvenience of going outside to a shelter independent of the building. A certain amount of forethought, however, is necessary in planning the refuge-room. As far as possible, it should be an inside room, with two doors for entrance and exit. All glass should be

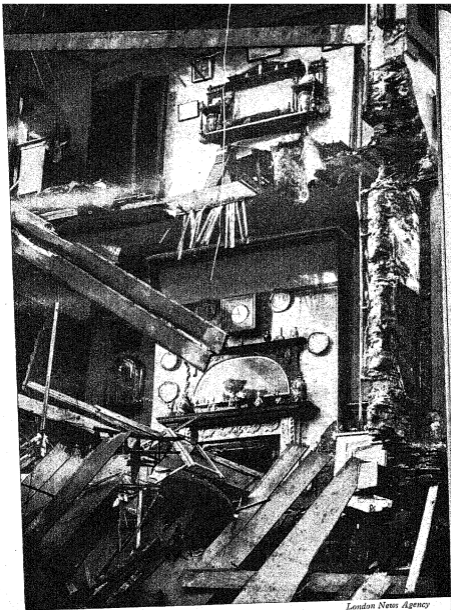
removed from it and it is better if it is on the ground floor, although the first or even second floor of a large, well-constructed building should be equally advantageous. As I have stated before, no high-explosive bomb has yet been known to penetrate more than three storeys when the building has a steel frame; the danger to the lower floors is not from the bomb itself but from the roof and superstructure falling on them and burying the occupants in the debris. To minimize the risk of this, it is possible to reinforce the ceilings of the lower floors, and particularly this refuge-room, so that they can stand up under the weight of debris falling on them; but this, of course, is a task that no householder could undertake on his own. He would have to consult a qualified architect first and get the work undertaken by skilled labour.

The sole danger to a building does not, however, only come from bombs from up above or from debris crashing down from upper storeys. Unfortunately, the effect of the fall of a high-explosive bomb is not only vertical, but horizontal over a wide surrounding area. Fragments of such bombs have, indeed, been known to travel up to a mile, so great is the force of the explosion. The effect of the explosion is to convert the explosives inside the bomb into large quantities of gas, and it is the expansion of this gas and the fact that room has to be found for it that produces the effect known as blast. Blast acts as a pushing force or impulse on anything in its vicinity and hence the walls of buildings in the neighbourhood of the explosion tend to cave inward. Nor is this all. This push or displacement is succeeded by a second inward movement, or suction wave, when air rushes in to replace the air previously displaced. Walls and other objects in the neighbourhood are thus pulled outwards. Destruction, therefore, can take place in two ways, and a wall which might be still standing after the positive push or

blast might collapse as a result of the second pull or suction. It is not, however, possible to lay down any general laws regarding blast, for its behaviour is very whimsical. Consequently, it is not possible fully to anticipate the damage that will be caused by it. In some cases, for instance, all houses within a radius of five hundred yards may be devastated, in others the immediate neighbours of the house hit may be left standing unharmed. One has frequently seen pictures of clothes hanging on their pegs or crockery intact on the shelves of buildings which have suffered direct hits. Blast, apparently, is a law unto itself.

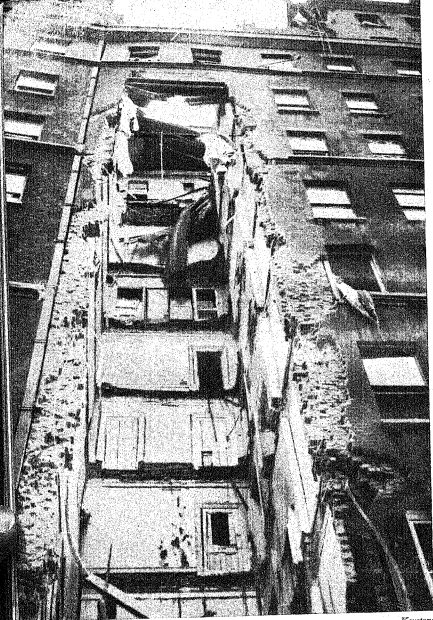
An additional effect of a high-explosive bomb is to set up earth-pressure waves, like miniature earthquakes. These waves, besides causing severe damage to water mains, sewers and underground cables, are also liable to shake down houses, in exactly the same way that an earthquake shakes them down.

It is not possible to guarantee protection against the effects of blast, but certain structural precautions are possible which will afford a fair measure of protection. Here, again, it is essential that the recognized standards of protection should be adopted and a competent architect or engineer employed to execute them. The device most commonly adopted is that of the baffle wall, of brick construction. This is placed outside the main wall of the building, a short distance away, and the effect of it is to absorb the shock of the blast and protect the building itself. But it is important that the baffle wall should be of sufficient thickness (13½ inches is the minimum considered desirable), that it should not be constructed to a height greater than seven or eight feet, unless buttressed, and that it should be bonded into the ground beneath it, thus giving it a secure foundation. Many baffle walls in India appear to have been erected to far too great a height and have no proper foundation. The only result of this is that they will collapse at the first shock of an



London News Agency

Blast is whimsical—the house is devastated but bric-à-brac adorn the mantelpiece undamaged and the clock is still going. The plates and pictures on the wall don't seem much the worse for wear either



Keystone

A BLOCK OF FLATS BOMBED

Work of a high-explosive—but in this case, the damage is from the upward force of the explosion and not from the bomb landing on the roof, which is almost undamaged

explosion and damage the building they are designed to protect.

Another form of protection is afforded by the sandbag wall, but here again it should be built according to specification and many walls so far constructed in India have been built on entirely wrong principles. Sandbag walls should not be constructed in preference to brick ones, as the bags are apt to rot very quickly, particularly in a damp climate, but they have the advantage that they may be assembled more quickly, and possibly more cheaply, at a time when there is a marked shortage of bricks. It is not essential that the bags should be filled with sand—if it is not procurable, broken earth may be used instead. In any case, the bags should only be two-thirds filled and should be beaten with a shovel into a rectangular shape. When filled, they may either be tied at the mouth or the mouth folded under. When a sandbag is laid with its longest side parallel to the face of the wall it is designed to protect, it is said to be a 'stretcher', and when the longest side is at right angles to the face, it is called a 'header'. The bags should be laid in alternate layers of headers and stretchers, the headers being the bottom layer. Headers should be laid with the tied ends inside. If the bag has only one seam, it should be placed on the inside in the case of stretchers. It is most important to break horizontal and vertical joints—in other words, the joints in one layer should not be opposite the joints in the next layer above or below. The purpose of this is to prevent the penetration of splinters and the complete collapse of the sandbag wall as a result of blast. It is also important to protect the wall from damp. This can be done by building it on a brick foundation, making provision for drainage, and a sheet of waterproof material, such as bituminous felt, should also be spread beneath the top layer of bags and between the sandbags and the wall against which they are piled.

Although it is not possible to protect one's house against a direct hit by a high-explosive bomb, it is possible to provide a fair measure of protection against the fall of incendiaries. Materials of varying thickness in accordance with their nature will give protection if laid down on the roof, but here again, it is better to put the matter in the hands of structural experts. Two inches of sand laid on the roof also affords protection against such bombs, but sand weighs thirteen pounds to the square foot and there are not many roofs that can stand such an additional weight thrust upon them. Some householders have been known to experiment with the idea but have desisted on hearing ominous cracks from up above. So, once more, you should consult your architect or engineer before indulging in such methods of protection.

It is also possible to minimize the risk of fire by removing all inflammable materials from the roof, staircase and top storey and you should, in fact, do so, because if an incendiary burns its way through your roof and sets the contents of the top storey alight, it will be much more difficult to save the rest of the house. Similarly, it is dangerous to have too much inflammable material about the yard or compound adjoining the house, such as packing-cases or dry timber. If their presence is essential, they should be placed at as great a distance from the building as possible.

There are two further structural precautions you can take against the fall of incendiaries. One, as already suggested, is to place wire-netting of half an inch mesh across all windows, to keep out bombs which do not fall vertically. The other is to paint all exposed woodwork with a combination of two pounds of slaked lime, one ounce of common salt and one pint of cold water. Two coats of this paint should be applied, and the inflammability of the woodwork will be considerably reduced.

Some of these structural precautions are admittedly expensive and should only be undertaken with the aid of a structural expert. Others, however, are well within the reach of all pockets, and many of them, such as protection of one's glass, can be done by the householder himself. All this, of course, is on the assumption that the building is a pucca one—houses in the slum areas will be dealt with separately in a later chapter.

Having decided what you should or should not have outside of the house, we will now consider what you should have inside it. One of the most important considerations is that you should have enough to eat. It may happen that your local market will be bombed or that vendors who normally frequent it will become so terrified in the early raids that they will not dare to approach it. In such an eventuality, you are likely to go very hungry if you have not made due provision beforehand. It is essential, therefore, that every householder should lay in sufficient reserve stock of foodstuffs to last him and his family for at least three or four days, but preferably a week or ten days. Do not buy luxury foodstuffs, but merely the essentials, rice or wheat, dal, spices, according to what you yourselves eat. Do not at the same time forget your servants, if their diet is different from yours, because they will be equally hungry. Air raids impose a great strain on everybody, and lack of proper nourishment only increases the strain. It is important, also, that a reserved quantity of essential commodities such as kerosene, matches and soap should always be kept in stock. Water is another matter deserving attention. If the city depends for its water-supply on a pipe line, the whole system might become disorganized if the pipes were burst or otherwise put out of action. To be deprived of one's source of water-supply in the hot weather would be particularly disastrous and demoralizing, and so the prudent householder will

ensure that he has a sufficient quantity of pure drinking water stored to last him over a considerable period if necessity arises. If it has been left standing for any length of time or the source of supply is in any way doubtful, it should, of course, be boiled.

In A.R.P. however, drinking is by no means the only purpose for which water is employed. It is also used for fire-fighting, and water in quantities for this purpose, along with sand, is what you should have ready stored in your house. If a major fire breaks out on your property, you will, of course, require the assistance of the Fire Brigade, but you must remember that if a major raid of incendiary bombs takes place, the Fire Brigade will be extended to its fullest capacity, and any small fires which can be dealt with by householders themselves, by their own efforts or jointly with their neighbours, should be so attended to. Even if the fire looks like spreading beyond the individual's power to control it, he can do much to hold it in check pending the arrival of the regular fire service. And the two most simple methods of keeping fire under control are by sand and water. To dwellers under modern civilizations, fires probably suggest chemical fire-extinguishers, but generally speaking these are quite unsuitable for dealing with incendiary bombs. They are all of them expensive and all of them heavy and difficult to move about in a restricted space; in addition to this, it is positively dangerous to use certain types of extinguishers on certain types of bombs. Unless, therefore, you are quite certain that you know the type of extinguisher you are using and its contents and that it can be used with safety on the particular type of bomb or fire with which you are attempting to deal, you would be most unwise to use it.

Sand and water are, however, a different proposition and can be used with safety under almost any conditions, except

that water has to be applied with care in dealing with an electro-magnesium incendiary bomb itself. Water costs nothing, except for the containers to store it in, and sand is both plentiful and cheap; sandbags have also been made available to the general public at very low rates. Certain Provincial Governments have already made the storing of these articles compulsory, one Government by providing them free for every householder and another by Ordinance compelling their provision by landlords, tenants or employers, according to the nature of the building in question. The quantities of sand and water to be provided have also been laid down in this Ordinance—six gallons of water in buckets or other containers and two sandbags two-thirds filled with sand for every 8,000 square feet of roof area of every building, and four sand-bags two-thirds filled with sand for every 8,000 square feet of court-yard or garden attached to such building. It is recommended that the sand and water be kept on the top storey, where the building has more than one floor. This appears to be a standard of protection which might reasonably be adopted all over India.

The most efficacious method of applying such water to a bomb and the resultant fire is the stirrup-pump, with which any prudent householder should take steps to provide himself. This resembles a garden pump and is fitted with thirty feet of hose and a dual nozzle which will either give a thirty-foot jet of water or a fifteen-foot rain-like spray. It normally requires three persons to operate it, one to operate the spray or jet, one to pump the water and one to replenish the bucket and relieve the pumper when he grows tired. It is possible, however, for two persons or even one to operate it in an emergency. So far in this war, two main types of incendiary bombs have been used. Firstly, the electro-magnesium bomb, weighing about $2\frac{1}{2}$ lb., which the Germans

used with such effectiveness over England. This burns with great heat for a period of ten minutes, though it becomes less active after the first two. Water is applied to this bomb, not to quench it, but to make it burn itself out more quickly. It is dangerous, however, to apply the jet from the stirrup-pump on to such a bomb, as the impact of water would cause violent explosions and splutterings, tending to spread the fire and endanger the person of the fire-fighter. The proper method to deal with such a bomb is to apply the spray to it, and the jet to the resultant fire, paying due attention to each in turn. The best angle of approach is to lie in a prone position on the floor and wriggle towards the fire, since visibility is better and the air cooler near the ground.

Many of these magnesium incendiaries are also fitted with an explosive charge, which makes it dangerous to go near them unless one is properly protected. The best method of protection in such cases is a shield made of deal and backed with 22-gauge mild steel, to arrest splinters from the bomb itself. Its specifications are 7/8 inch deal, 28 inches long and 20 inches wide, and the total weight is about fifteen pounds, but it is possible to provide lighter but less effective shields. The fire-fighter crouches behind the shield, looks through the peepholes and plays his hose through a slit in the shield's side. If no other protection is available, an overturned chair or table moved in the direction of the bomb has been found in England to be adequate cover.

The Japanese, however, as far as information has reached India at present, have not been employing the magnesium bomb, either with or without an explosive charge. The reason for this is unknown, unless they are short of magnesium, for the alternative they have adopted is far less effective. This is the phosphorus incendiary bomb, which weighs about 100 lb. and consists of a large number of rubber pellets, all of them impregnated with phosphorus.

When the bomb bursts, these pellets fly all over the place to a distance of sixty yards and ignite within a space of one or two minutes. Thus many fires may be started simultaneously in a small area. This is in contrast to the magnesium bomb, which will only start one fire, though the sparks emitted by the ignition may start several others. The pellets of the phosphorus bomb will burn for about seven minutes, but with nothing like the intense heat of the magnesium bomb, and they are very easily brought under control with sand or water. Their importance to the enemy is their nuisance value. As the pellets inside the bomb may be very numerous, a large number of fires may be started simultaneously, all of which will have to be watched and attended to, and it is necessary to make a very thorough search of all nooks and corners before being satisfied that every single fire started has been brought under control. Secondly, these pellets have the irritating habit that, although they are extinguishable with water, as soon as they are taken out of the water and become dry, they burst into flame again, and will continue to do so until they have burned themselves out. The only way to deal with them, therefore, although they may be temporarily brought under control by water, is to take them away to an open space with nothing inflammable around and let them burn themselves out, which they will do in under ten minutes. They should be scooped up and taken outside in a metal container, and never touched with the hand or bare skin, as they leave bad sores behind. Either the spray or the jet of the stirrup-pump can be applied, although the jet will naturally be more powerful. In view of the fact that this is the type of incendiary bombs most likely to be used in India, it is obvious that the provision of an adequate amount of water is essential to deal with it.

If water is effective for dealing with incendiary bombs, sand is even more so. Sandbags can be placed (not thrown)

on magnesium bombs to smother them, and, even though they be fitted with an explosive charge, if the bag is placed on it in the first thirty seconds, the charge will not have detonated and the bomb may be brought under control altogether. Even though the bomb is smothered from up above, however, care must be taken to see that it is not still alight underneath and does not set on fire whatever substance is beneath it. If the bomb is a phosphorus one, sand can also be employed to smother it and the bomb can then be left to burn itself out in peace; if there is no open space for the bomb to burn away in, this is the best method of dealing with it. The only disadvantage of the sand as compared with the water method is that if great heat has been generated or the fire has begun to get out of control, it will not be possible to approach near enough with the sand to apply it, whereas water can be played on it from a distance with a hose.

Sand and water, therefore, are commodities that will be required in every household, and in plenty. Other articles will be of necessity in the room chosen as refuge-room in the house, on the assumption that it may be necessary to spend long hours in it at a stretch. These articles should be collected beforehand and placed in the refuge-room in readiness—there almost certainly will not be time to do it when the air raid warning has gone. The most obvious articles, which will probably be there already, are tables and chairs to sit down in; a mattress with bedding is a good idea in case anybody wants to sleep or the raid takes place at night. Plenty of fresh drinking-water is an essential, especially in the hot weather. Food should also be at hand, preferably in airtight tins or jars, if by any chance a gas attack is apprehended. The food, as far as possible, should be ready cooked; it is unwise to light a fire unless absolutely necessary because it will destroy the purity of the air. The gas should

be cut off at the main as soon as the alarm goes, to avoid the risk of an explosion; this means that gas cannot be used for cooking during a raid. Although it is not essential to cut off the electric current, unless an incendiary bomb falls directly inside the house, in which case there is danger of the fire spreading rapidly if water falls on live wires, not every householder can afford the luxury of electric cookers. Therefore it is advisable to have your food ready cooked in advance. And it is scarcely necessary to add that the necessary utensils to eat it with should also be provided.

Washing materials and sanitary arrangements are also essentials. Nervousness in an air raid or, indeed, in any alarming situation is apt to have an unsettling effect on one's stomach and hence it is essential that there should be some kind of sanitary arrangements easily available. The best thing to do is to provide a commode, chamber and wash basin, and screen them off in one corner of the refuge-room, and it is important also that some kind of disinfectant such as phenyl, as well as soap and towels, should be provided. It is also important to have a first aid set in the room. This need not be very elaborate but should contain the essentials, such as cotton wool, lint, bandages, disinfectants and unguents, together with a clean pair of scissors.

The next essential—and this is of paramount importance—is amusements. It is never possible to foretell how long one will be kept chained to the refuge-room, until the 'raiders passed' signal is sounded, and in the meantime it is essential that the mind should be kept occupied and not give way to unnecessary speculations. Each individual will have his own personal way of amusing himself. My own personal idea is a quiet book, not too heavy, but restful and soothing; others no doubt, will cry out for thrillers, whilst others again will not be able to stomach anything heavier than a light magazine, with plenty of illustrations. It is all a question of

personal temperament. Some people might find it a good opportunity to get written all those letters in reply to the ones that have been lying so long unanswered. Women may prefer to spend the time sewing, or it may be decided to while away the time with cards or the gramophone. Whatever the idiosyncracies of each member of the family may be, it should be ensured that provision is made for his particular weakness. And it is most important that arrangements should be made for the children of the family. If they become frightened or troublesome, they will quickly get out of hand, tempers will be lost on both sides and everybody's nerves badly frayed at a time when it is essential that nerves should be as calm as possible. Therefore it is essential that the children be kept amused without demanding too much attention from their parents, and an adequate supply of toys and playthings should, accordingly, be arranged.

You would be well advised also to have some alternative lighting system, in case the current gets cut off; this can be done by one or two hurricane lanterns or candles, but make sure that you don't forget the matches. A pickaxe may be useful, in the event of fire, to clear away obstacles in one's approach to it.

Lastly, certain articles are usually included in lists of essentials for the refuge-room, which are intended to be used in the event of a gas attack. These include newspapers and brown paper, hammer and nails and adhesive tape, the idea being that the room can be sealed if necessary. Experiments with a shepherd's cottage on Salisbury Plain in England have proved conclusively that such home-made sealing will stand up to the penetration of poison gas for a considerable time. It is to be hoped, however, that the possibility of poison gas being used as a method of attack in India is remote.

So much for the positive steps every householder should

take to protect his house, and the articles he should keep ready in the refuge-room. The next point to consider is his behaviour when the air raid warning goes. He should, in the first place, shepherd all members of the family into the refuge-room, close all doors and shutters and open all windows. The gas should be cut off at the main, so that if the pipes are damaged there will be no danger of an explosion. And he should take steps to see that everybody moves about calmly and quietly, without undue fuss or panic.

If he is caught in the open, away from his own home, he should immediately seek shelter in the nearest pucca building. Although certain buildings in every city are likely to be earmarked as public shelters, that does not absolve other householders from the obligation of giving shelter to all who may need it. Consistent with proper arrangements for shelter of his own family, particularly the womenfolk, there is a moral obligation on every householder to admit outsiders at the time of a raid. This is an act of kindness for which he himself would be grateful were he to be caught in the open. It is unlikely that people admitted into another's house at such a time would abuse the hospitality thus offered and commit acts of goondaism, and at any rate such acts could be expected to be so few and far between that every householder should be prepared to take the risk. Generally speaking, any pucca building should be open to any who may need it at any time of the day or night, but an exception must naturally be made in the case of buildings which are scheduled as protected places, for the interests of public security demand that the public should be excluded from entering them at any time.

If no pucca building is near at hand for shelter, anybody caught in the open should shelter in the nearest slit trench, of which many are likely to have been dug all over the city. These trenches, although not absolutely ideal as protection,

give a very fair measure of safety, and have, of course, as their prototype the trenches which soldiers lived and fought in for four years in the World War of 1914-18. They are sufficiently deep for a person squatting therein to be protected from splinters flying along the ground-surface, and they are sufficiently narrow to be a difficult target to aim machine-gun bullets into from the sky. It is important, however, to adopt the correct posture in sitting or squatting in a slit trench. Anybody sitting with his back in direct contact with the trench wall will lay himself open to severe or possibly fatal concussion due to the pressure-wave set up in the wall if a bomb lands in the neighbourhood. It is better, therefore, to sit or squat in the centre of the trench, not in direct contact with the trench wall.

Just as it should be morally incumbent on every citizen to throw open his doors at the time of an air raid to any who may need shelter, so, if he has any open land at his disposal, he should be sufficiently public-spirited to have slit trenches dug thereon, to supplement those dug on public land. Only a limited number of people can shelter in each slit trench, and it is obvious that the total area of public land suitable for the purpose would not be sufficient to contain all the city's inhabitants, particularly the slum-dwellers, whose own houses are not normally of sound enough construction to be used as shelters. If private owners were to give up a reasonable portion of their land for the purpose, the benefit to the general public would be enormous. These trenches are normally dug in the form of zigzags, and no straight length should be more than twenty-five feet. It is advisable, also, to have ramps or steps cut at each end and it should be insisted that these are used for entrance and exit, or otherwise the sides of the trench are likely to collapse under the weight of people jumping in. It is also better to dig them under trees or some other form of

protective covering as it has been found that people in trenches are happier if there is something between them and an open sky with hostile planes flying about in it.

The important thing, however, is that when the raid warning goes, shelter of some sort should be found, either in a pucca building or slit trench. There is a great tendency in the early raids on any city—Chungking and Rangoon are the glaring examples—for people to stand about the streets and stare up at the sky, watching for the bombs to drop. This is exactly the way in which casualties are caused, particularly if the enemy is using the anti-personnel type of bomb with low trajectory, and it is also exactly the way in which panic is occasioned. If there is no other cover available, lie flat on the ground with the face downwards. If it is possible to find a depression in the ground to lie in, that spot should be chosen. The chest should be kept off the ground by leaning on the elbows. This will prevent the lungs becoming bruised. To prevent shock and damage to ear-drums, it is best to keep the mouth slightly open, either by biting a rolled handkerchief or by gripping a pencil between the teeth. You will probably feel and look ridiculous in such an attitude, but it is better to be ridiculous and at the same time safe than dead and dignified.

It is advisable, in towns threatened by air attack, that children should not be allowed to wander about the streets unattended or to congregate in large numbers in open spaces. It is best that they should take their exercise in the near neighbourhood of their own houses or schools, so that they can be moved to shelter immediately the warning goes. The same applies to domestic pets, which will be a nuisance if left in the open in an air raid and which, in any case, will not be permitted to enter public shelters or slit trenches.

As there is no knowing the precise moment at which the air raid siren will go, it is conceivable that one will be caught

whilst travelling in a public vehicle or in one's own car. If one is in a train, all glass windows should be lowered at once and the wooden shutters closed. It is also advisable to get down as low as possible, under the seat, if possible—unpleasant accidents from machine-gun bullets might otherwise occur. It is scarcely necessary to add the caution that is equally applicable if you are in the privacy of your own home—do not look out of the window. It is inadvisable, also, to stay in a bus or tram. It is better to get out quietly and go to the nearest pucca building or slit trench.

If one is travelling in a private car, it is best, if one is anywhere near one's destination, to drive straight there with as much speed as is compatible with caution. If one has to stop, the car should be parked, if possible, off the public highway, so as not to impede the passage of vehicles engaged in essential services. In any case, the car should not be parked at a road junction, near a fire hydrant, warden's post, first aid post, police station, fire station or A.R.P. depot. The vehicle should be left unlocked and with glass windows lowered to prevent breakage. Many cities now insist that owing to black-out restrictions dimmed lights should be left turned on when the car is parked in a public place at night. As soon as the air raid warning goes, however, all lights must be switched off. It is, therefore, essential that the car should be left unlocked at such times, as otherwise some policeman or civic guard will be forced to break it open or smash the lights in order to extinguish them. Carts and other vehicles should be made to draw in to the side of the road at the time of warning, and animals unharnessed and tied securely to a tree or post or else to the wheel of the cart. They should under no circumstances be tied to fire hydrants or electric light posts.

There are a few other simple precautions which can also be taken by every individual. At the time of a raid, cotton

wool soaked in vaseline should be put inside the ears, to lessen the sound of the fall of bombs and anti-aircraft fire, which is apt to be very frightening. It is a good idea always to carry a little cotton wool about in one's pocket, in a test tube or other convenient container. It is also important, though it may sound gruesome, that everybody should wear an identity disc. This is in order that one's friends or relatives may be communicated with immediately, in the event of one's becoming a casualty. It should, therefore, be inscribed both with one's own name and address and with that of the friend one wishes to be informed. Lastly, the more members of a household who have received elementary training in first aid the better. It is only intended that the most rudimentary treatment should be given by this means until more experienced help is available, but even such elementary treatment may be instrumental in saving considerable suffering or even lives. And just as it is important that everybody should know where the nearest warden's post is, it is equally important that he should know where the nearest first aid post is to be found.

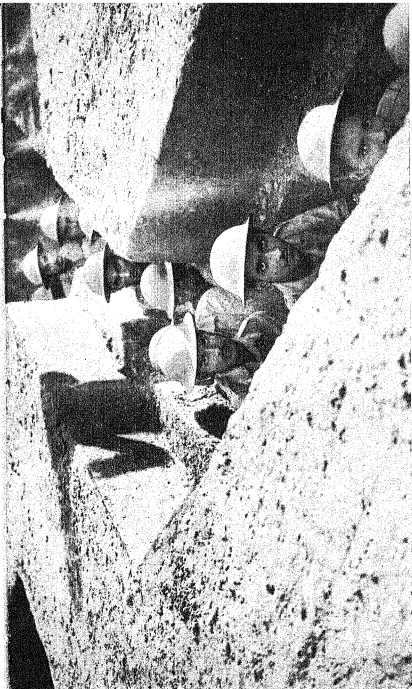
The householder's duties, however, do not end as soon as the 'raiders passed' signal has sounded. He should make a round of his property to make sure that no damage has been caused or fires started before turning on his gas again; if fires have been caused, the electric current must be switched off at once. He should next satisfy himself that none of his neighbours are in need of help and, if they are, he should provide it with all the resources in his power. It may be necessary to feed or clothe them, and this should be done without stint or grudging. It is everybody's business to help restore normal conditions as quickly as possible, and this can only be done by carrying on as usual. Sightseeing at scenes of 'incidents' should be rigorously discouraged, as rigorously as listening to and passing on of rumours, which

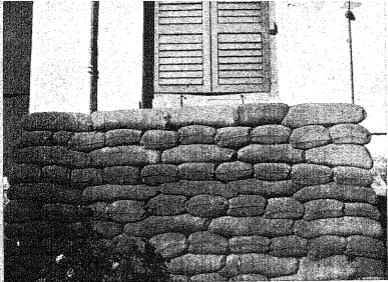
will be dealt with more in detail later. It is especially important not to gossip after air raids, because human nature is such that a man will only pass on the unpleasant details he has witnessed, and these are bound to be exaggerated and distorted in the re-telling. Accurate information will always be obtainable at the information bureaux which will be set up specially for the purpose all over the city.

It is of the utmost importance that the public should obey the instructions of the wardens and the police when the raiders have passed, as such instructions will only be issued for the general good. It might happen that a bomb has landed but failed to explode—an unpleasant contingency that frequently happened in the raids on England and caused almost more trouble than bombs which detonated on impact. In that event it will be necessary to evacuate all property in the immediate neighbourhood, until the bomb has been removed to a place of safety and rendered innocuous, since nobody can predict the time when it will explode. It is better to save one's life at the expense of a certain amount of personal inconvenience, and so when the police order premises to be evacuated, they should be evacuated immediately and without argument. In case such a contingency arises, also, it is wise to keep a suitcase ready packed with essential articles of clothing and other property of value so that one can snatch it up at a moment's notice. It is also wise to have some mutual arrangements with friends or relatives in another part of the city to shelter there if one is forced to leave one's own house, or for them to come to you in the event of a like contingency befalling them.

Unexploded high-explosive bombs will be dealt with by specially-trained bodies of men, corresponding to the 'suicide squads' which did such notable work in the Battle of London. It may also happen that an incendiary bomb

THE CORRECT WAY TO SQUAT IN A SLIT TRENCH





Government of India

THE RIGHT WAY TO CONSTRUCT A SANDBAG WALL

—AND THE WRONG WAY

Government of India



will fail to become active immediately on impact. It should, in such a case, be picked up in a shovel and carried horizontally to a place where it can burn itself out without endangering any property in the locality. In any case, the position of any unexploded bomb should be reported immediately to the nearest warden or policeman. It might well be that nobody except the actual discoverer has seen it land, and if he fails to report it enormous havoc and loss of life may be caused all around by its subsequent explosion. An unexploded bomb is, indeed, as hinted above, almost more of a menace than an exploded one. For if a bomb explodes on impact in the course of an air raid, it is likely that many people will be taking shelter away from its reach, but if it explodes subsequently, the majority of people will have returned to their ordinary avocations all unsuspecting, and hence if the bomb does explode later, the damage it causes is likely to be much more severe. Therefore, it is essential that its location should be reported at once and steps taken to evacuate the area.

The hints given in this chapter are all simple ones which any householder can undertake without difficulty or inconvenience and with little expense. Not only should he see that he himself is familiar with them; it is equally important that every member of his family, women and children included, should be equally acquainted with them, so that they can assist him at a time of crisis or carry on without him in his absence.

CHAPTER VI

THE FIFTH COLUMN

I—PANIC

THE part that a citizen can play in his own defence and the defence of others does not stop at the concrete and positive steps he takes, such as protection of his building and ensuring that there are reasonable quantities of food and water in his house. There is another and much bigger part that he can play, a part that concerns himself alone but on the success or failure of which the behaviour of all his neighbours may depend. For it is on how the individual behaves during the stress of air raids that the behaviour of the whole community depends. Fear and despondency are more contagious than good cheer and happiness, at least in times of crisis, and if one man is gloomy and frightened, his attitude of mind will spread to all his surroundings. And if both he and his neighbours do not keep a tight grip on themselves, the fear he communicates will rapidly develop into blind panic.

It is of the utmost importance, therefore, that each individual citizen should know how to preserve his own morale and also the morale of others. Perhaps the best method of doing so is to be found in the old Greek dictum: 'Know thyself'. One must know and understand one's own weaknesses and susceptibilities before one can strengthen one's own morale. Morale is essentially an individual affair—the method one man resorts to to uphold it will be anathema to another. Some find consolation in religion at a time of crisis, to others it will be meaningless. One cannot lay down hard-and-fast rules except to say that each man

must study his own needs and satisfy them. Air raids impose a great strain on everybody concerned, even on those who in normal times have the stoutest hearts and are the most phlegmatic in their outlook, and it often happens that those who in ordinary life are the most timid rise to the greatest heights of bravery when the occasion demands it.

Starting off with the assumption that air raids are frightening things (and few, if any, who have lived through them will be prepared to dispute it), one has to decide for oneself how one will face up to them. If you can convince yourself that it is possible to endure them, that however great the devastation caused and the number of casualties, there will always be a residue of civilization left, then the experience, though it may perturb you, will not demoralize you completely. It has become almost a truism to say that, however much material damage a bomb may effect, there is something in the inner man that is beyond the bomb's reach and is indestructible. The popular phrase to describe the attitude of mind that is able to make such resistance effective (and there are always popular phrases much more apt than literary expressions at times such as these) is 'taking it'. Examples of such ability to 'take it' have already been quoted in an earlier chapter in this book.

'Taking it' may be regarded as the positive side of morale, and each individual must prove his own ability to 'take it' if the whole moral fabric of the city is not to collapse. The negative side of morale is his ability not to give way to fear or panic. Fear is essentially an individual affair, a particular attitude of mind in the individual. It is only when it translates itself into a body of men collectively that it develops into the much more dangerous form of panic. Fear is a natural mental process in every man and does not call for much analysis psychologically. Panic, on the other hand, is not found under normal conditions and is a mental

process transmitting itself from the individual to the crowd which demands close psychological attention. A little fear is reasonable in everybody at moments of crisis; the most usual epithet applied to panic is 'blind', sufficient indication in itself that it is unusual and abnormal. To quote from Dr George Sava's book, *They Stayed in London*: 'Terror and its counterpart, fear, is nothing more than a biological fact—it is the heritage we have from the dark days of our evolution. Men stampede in the same way as elephants. Nations go over the abyss not because they are defeated but because they find themselves in the grip of fear. . . . Few men possess the ability not to be frightened.'

Panic is a result of fear, but its consequences are much more far-reaching. From the psychological viewpoint, certain bodily changes and nervous processes are caused when an individual gives way to it, and the outward manifestations of these changes are certain abnormal modes of behaviour, such as screaming, trembling and an irresistible urge to escape. The result of this is a drain on the nervous energy of the brain and a weakening of the will-power, leading in its turn to an almost complete absence of rationality. A state of panic is, indeed, very much akin to a condition of temporary insanity, with the result that it is difficult to reason or argue with somebody suffering from it.

When an individual or crowd succumbs to panic, its first desire is to escape from danger, whether the danger be real or imaginary, into what it believes to be a place of safety, although, of course, the safety to be obtained there will very often be completely illusory. Like that much-maligned creature, the ostrich, it seeks a bolt-hole and may look for security in the most unlikely and precarious places. Such a state of mind is highly infectious and is likely to transmit itself from one member of a crowd to another with lightning rapidity.

A multitude of reasons may give rise to panic, but it cannot be denied that the most fruitful cause of all is rumour, which will be discussed more in detail in the next chapter. In the meantime, as illustration of the effect of rumour on panic, I cannot do better than quote a passage from *The Road to Bordeaux*, by C. Dennis Freeman and Douglas Cooper, which describes, possibly as well as any work yet published, the panic and chaos that led to the final overthrow of the French Republic in June, 1940:

‘Further along the road, just outside St Martin, we were stopped again, this time because the level-crossing gates were shut. There seemed to be quite a number of cars halted on the other side. The keepers of the gates had come out of the little lodge and were talking excitedly to the crowd. Then they came over to our side. “Toucy is in flames; the Germans have arrived there already and set fire to it. Montargis is captured. The Boches are closing in on us on all sides. Tanks are rumbling down the road behind you now. They can’t be more than five kilometres away. We have just heard it by telephone.”’

‘The occupants of two cars, which had drawn up behind us, came forward to hear what was being said. Their terror turned to panic; after all, railway employees must know the truth, it was passed on officially down the line. Our protestations that we had just come from Toucy, that the Germans were not there, and that they were certainly not within fifty kilometres, were of no avail. It was obvious that, in the space of a few minutes, these level-crossing keepers had succeeded in creating among the occupants of some twenty cars a condition of misery and panic based on the slenderest facts. Women were crying, men were bewildered; they had friends and relations in Joigny, Auxerre, Montargis, Nevers. What should they do? Should they go and rescue them? Should they leave them to their fate? Could they have escaped?

Families were scattered, out of touch, homeless. There had been no news for ten days of fathers and sons in the army, and they in their turn would have had no news of their families left behind. We seemed to be alone in grasping the fundamental facts: if their families had remained in their houses, they would not have been separated, secondly they would not have lost touch with their menfolk in the army, thirdly there would have been no rout.'

It is now admitted that one of the major causes of the collapse of France in 1940 is the fact, not that her Army suffered decisive defeat in the field, but that there was such utter demoralization of the civil population, such blind panic, that refugees thronged the roads in their thousands, blocking and impeding all military movements which might have held back the invaders. The successive chapter headings of Freeman and Cooper's book, quoted above, tell the sad story only too well: 'Retreat', 'Panic', 'Chaos'. The three followed inexorably on the heels of one another. So bitter, indeed, is the lesson learned from the behaviour of civilian populations driven mad by fear in the Low Countries and France that in any future operation in this war where similar circumstances arise, that is, where the army are doggedly fighting a rearguard action in a populated area, civilians who show signs of giving way to panic are likely to meet with short shrift from the military. Necessity knows no law and it is essential that the army's movements are not impeded by the civil population; therefore it is certain that the military themselves will deal with any symptoms of panic and all the more imperative in consequence that each individual citizen should know how to steel himself against it.

Rumour, however, is by no means the only cause of panic. Another principal cause is a feeling of insecurity—at a time of air raids, this is occasioned if the enemy's bombing causes widespread devastation, or if the civilian population has not

been taught to have faith in the capacity of the local administration to protect it, or, again, if they have not been properly practised in A.R.P. measures. In Singapore, for instance, it is said that many coolies fled away after the first raids, simply because their employers had refused to practise them in getting in and out of shelters in a mistaken supposition that this might cause panic beforehand. Such a feeling of insecurity may also be caused by the influence of enemy propaganda. Misdirected propaganda on the part of the local authorities may have a similar effect. And, of course, one of the most fruitful sources of panic is the spreading of wilfully false stories by fifth columnists—this is in contrast to rumour which is often merely a distortion and misrepresentation of the truth by careless and irresponsible, but not necessarily ill-meaning, people. Naturally, when a state of emergency is declared, everybody becomes more nervous and susceptible to suggestion, and many people at the same time are inclined to look on the gloomiest side of things. This, together with a lack of self-confidence which seizes hold of many people at a time of crisis, also increases the panic.

Nothing breaks down civilian morale as quickly as panic, and it is therefore the duty of every citizen to combat it. The only real way in which the individual can do so is to face the facts squarely. He must realize just what the enemy's powers are, what the possibilities are of his success, and compare them with the enemy's weaknesses and the chances of his failure. He must preserve a correct balance between over-optimism or 'wishful thinking' and melancholic pessimism. Each state of mind is equally dangerous—the latter, because a state of continued depression is bound to lead to fear and thus to panic and the former because, when the rebound comes and the wishful thinker realizes how wide of the truth were his prognostications, the reaction is apt to

be very strong and his outlook may swing over to one of black foreboding. This, in its turn, will obviously be very bad for his morale.

Naturally, the individual will have to control himself and his own fear before he can attempt to control that of the mob. This will, admittedly, demand a great measure of self-control which may not be easy without practice. Having controlled oneself, one can then attempt to control others. Much will have to be improvised on the spur of the moment. One cannot, for instance, do much with a crowd that has given way to panic merely by speaking to them or even by shouting at them. The only thing to do under such circumstances is to try to divert their attention, to give them something else to think about, or, if possible, something else to do. Community singing has on many occasions been proved surprisingly successful for the purpose. One of the liners carrying school-children from England to America in the early months of the present war was torpedoed in mid-Atlantic and a large number of children were drowned. The casualties would have been far higher had all the children given way to panic and made a scramble for the boats, but instead they were well-disciplined; the leader in charge of them started some community songs in which all joined whole-heartedly. This enabled those in charge of the rescue operations to shepherd them into the lifeboats in an orderly manner and in this way many valuable lives were saved. There have been countless incidents in history where crises have been averted by somebody having the presence of mind to turn the crowd's attention away to something else; the actual method adopted will, of course, depend on the particular crowd and the particular situation. Here, for instance, is an illustration from George C. Curnock's *Hospitals Under Fire*; the scene is the bombing of the Great Ormond Street Children's Hospital:

'With fire above and flood—from broken mains in the street behind us—below, there was but one thing to do. Safe though the children were for the moment, they must be moved.

'Then said the nurses, calmly smiling, to the children in their charge: "Come along, we're going to take you to see the searchlights."

'Some of the children thought it a huge joke to be taken out of bed. It was something different and exciting. All were out safely in ten minutes.'

Sometimes, however, instead of humouring individuals, it may be necessary to use force. If a crowd shows signs of panic, a good blow temporarily knocking out one of the ringleaders might under certain circumstances have a very sobering influence on the remainder of the crowd. The important thing, however, is to keep people occupied to prevent panic, for it is at a time of crisis when people have nothing to occupy their minds or hands that the seeds of panic are sown. Here is another illustration from *The Road to Bordeaux*, quoted above. The convoy of ambulances of which both the authors were drivers is temporarily held up at the beginning of the retreat from the Marne:

'We had come out to work and just at the moment when there must have been plenty to do we were unoccupied. Everybody was growing restless, apprehensive. What had gone wrong? It was curious how Lenoir had to improvise each meal with no central depot from which to draw provisions. For three days now we had lived on scrap meals as if he had no time to get anything ready and was always prepared to leave at a moment's notice. It was curious how the mechanics, with so much time on their hands, would never undertake any but essential repairs.'

Whatever the best method of dealing with the individual case, it is essential that panic be dealt with at the earliest possible stage. Panic is a fast worker and it quickly reaches

a stage when it is virtually beyond human power to control it. The symptoms are not always easy to detect, for it is an insidious creature, prowling about in the dark. Its main effect is to cause confusion and in this it succeeds only too well, if not properly handled. And, in the very initial stage, the only way to handle it properly is for each citizen to keep a grip on his own morale, to exercise the maximum amount of self-control on himself. This passive form of civil defence is every bit as important as the more positive A.R.P. precautions which it is in the power of every citizen to undertake.

CHAPTER VII

THE FIFTH COLUMN

II—RUMOUR

AN expression that has gained enormous currency in the last five years is 'fifth column'. Possibly it is heard more often than any other phrase when the interrelations of the civil population and modern warfare are discussed. It had its origin in the Spanish Civil War, when General Franco is reported to have said that a fifth column fought for him inside the walls of beleaguered Madrid, a body of traitors who would smooth his path for him and assist the work of his regular armies.

Fifth columnists are to be found in all ranks of human society, but there are two nebulous creatures who are their active assistants. The first of them we discussed in the last chapter—Panic. Panic is often artificially stimulated in order to aid the work of the fifth column. An even more potent ally is Rumour, and equally evasive and difficult to lay by the heel. One can ferret out a parachutist dropped by an enemy aeroplane and donning the garb of a peaceful citizen, even though the task may require skill and time. Rumour is very much more difficult to catch hold of, for its comings and goings are hidden and unmarked. Just try tracking a rumour down to its source and see the labyrinth you will become involved in.

The explanation, of course, is that man is by nature a contrary-minded animal. On what other reasoning can one explain the existence of so much evil in the world, particularly of the roguish variety. The reason is to be found in the fact that there is so much more pleasure in doing something that

is vaguely 'not quite right' and escaping detection than in doing some negative good by merely refraining from doing evil, and getting no praise whatsoever for one's forbearance. On the same principles can be explained man's predilection for the slightly naughty story, for in many circles the story that can be repeated everywhere openly has no point or humour.

The case is much the same with rumour. Men listen to rumours and pass them on because there is the same flavour of naughtiness or surreptitiousness that makes the doubtful story so salacious. The explanation is, no doubt, buried deep in the roots of psychology. Nearly everybody enjoys a good rumour and nearly everybody enjoys passing it on; I do, and if you are honest with yourself you probably do also. The more improbable the story, the better. One is reminded of the cartoon in one of the English illustrated papers, in which two bored individuals sitting down together, say to one another: 'Let's see who can invent the biggest rumour.' One wonders, in fact, if this is not the way in which many rumours find their origin, a slightly malicious strain of aberration in an inventive or imaginative brain. However that may be, it cannot be denied that it requires an extremely strong-willed mind to resist the whispers of a really convincing and well-timed rumour. One's mind is usually torn in two directions, not knowing whether it wants to believe the rumour or not. As it is the course of least resistance to believe everything one is told without arguing the point, it is usually belief in the rumour which wins. It needs a considerable effort to disbelieve it, because one first of all has to argue with oneself if it is true or not and then has to argue with the fellow who disseminated it.

This, of course, is no excuse for not trying to combat the menace—for a moment's reasoning will convince one that it

is a menace. For rumour is a snake in the grass—there is always just the outside chance that the story it seeks to put about may be true. The Germans have proved themselves extraordinarily skilful at this type of game, particularly on the radio. They usually insert a percentage of truth into their stories, and a percentage that is demonstrably true, so that one finds it hard not to accept the accuracy of the remainder of the story, which is complete falsehood. It is, in addition, extremely difficult to break a story up into its component parts and settle in one's own mind what must inevitably be true and what equally inevitably false. And the Germans, of course, have made a fine art of making the true seem false and the false true.

It scarcely needs emphasizing that wartime breeds a far larger crop of rumours than peace. Many rumours are actually put about by the enemy or his agents, and many others by persons possessed of no particular desire to serve the enemy's cause but merely of a malicious twist of mind. Both classes of persons can rely on a sufficient number of credulous people to pass the story on and serve as agents in their turn. But the credulous who, in many cases, cannot help being credulous through infirmity of intelligence, are not as big offenders as the idle gossipers, who pass the story on for no other purpose than that of having something to say. These are the worst enemies of truth and the biggest supporters of rumour, for, not content with passing it on, they usually embroider the story until, with successive embroideries between one idle gossip and another, it is improved beyond all recognition, until, by the time it has run its full course, it is a completely different story from the one which started out. Here is a mild example of one, culled from that delightful book *Outside Information* by Naomi Royde-Smith, who herself sub-titles her work 'A Diary of Rumour':

'A protean rumour which has shown itself in various forms during this month has reached here in what may be its final and true shape.

'It began with a reported tocsin in Cornwall, spreading to Hampshire, heard by many and given a headline in the morning papers about three weeks ago: the Germans had landed somewhere in Dorset; in Kent; in Lincolnshire. This was officially denied. Then a whisper started that the corpses of German soldiers, in full battle-dress, had been washed up all round the coast. Presently the horrid detail that each corpse had its hands tied behind its back was added. I felt that this was a sheer Quisling intended to foment indignation against the Royal Navy. Who else could have had this notion or the opportunity of doing such a thing? Then the tale grew into patent absurdity. The whole of the Channel from Weymouth to Devonport was covered with the corpses of stricken armies. The retailer of this piece of nonsense had pointed out to those who brought it to him that, if this were true, the entire population of the Reich must have perished, also that no corpses drowned in the North Sea would get far beyond the Straits of Dover as the tide there would wash them to and fro. After that the rumour died down, but today it has come back in a more plausible form. The invasion had a dress rehearsal last week. The R.A.F. attended it. The embarked "Wehr" did not like the prospect. A suspicion that this was no mere rehearsal produced a stampede. The hospitals of Northern France are now filled with German soldiers, all shot in the back by the bullets of their commanding officers.'

This type of rumour, of course, is partly the offspring of what we have referred to before as wishful thinking. Possibly it does not do as much harm as the type of rumour that seeks to make out the worst about anything, but both are equally deplorable as inaccuracies and perversions of the truth.

The action of a rumour is, indeed, strangely reminiscent of a snowball, and in two ways: the more it is repeated, the more it becomes exaggerated and distorted, and the more it is believed, the more people will be prepared to believe other rumours and brand any story that bears any resemblance to the truth, or appears to have an official stamp, as Government propaganda. In India, there is a peculiar tendency to regard Government as being incapable of putting out the straight truth in its pronouncements. If another simile is to be sought, rumour is not unlike a certain game popular at children's parties, where a group of people sit in a row: No. 1 whispers a message into the ear of No. 2, who passes on to No. 3 what he thinks he has heard; No. 3 then relays the information he thinks he has picked up to No. 4, and so on down the line. The last recipient of all has to speak out publicly the message he has received, and if there is a single word the same as the message originally put out, the contingency is an extremely rare one. Similarly with rumour. The final form of a story bandied about in public rarely bears any relationship to the original version.

Rumours, as has already been stated, assume an additionally sinister importance in war time. Nothing causes so much depression as either a favourable rumour that subsequently turns out to be untrue or an unfavourable one which gains general credence. To combat such rumours is, therefore, an essential part of civil defence as it concerns the morale of each individual citizen. It is the duty of every citizen to fight against rumours, to fight, if possible, against hearing them, and certainly to exercise the necessary self-control on himself to refrain from passing them on. It is difficult to avoid listening to rumours unless one blocks one's ears with sealing-wax, and then one would shut out much useful information as well. One has, regrettably, to listen to rumours, but one can

use discrimination in the assimilation. It should be possible for the averagely intelligent man to reason out with himself how much of the story can be true. One can always ask one's informant where he got the information from, and watch the result. It is more than probable that he will hedge and stammer and say that he heard it from somebody, he cannot remember who for the moment. For the plain truth of the matter is that nobody likes to be asked the source of the rumour he is spreading, and still less if he is repeating it word for word exactly as he heard it. That is all the more reason for verifying the accuracy of a story before repeating it. Anything one is doubtful about should on no account be passed on without proper verification, however strong the temptation to do so may be; and even if a man is satisfied as to the truth of the story he hears, he should consider the further point whether it is really wise and in the public interest to pass the matter on. There is, after all, a lot of truth in the ancient adage: 'Where ignorance is bliss, 'tis folly to be wise', and nowhere is this more so than where ignorance is dispelled by the spreading abroad of a rumour whose authenticity is in doubt.

Rumour plays a big part in the success or failure of civil defence—a much bigger part than most people realize. Nothing destroys confidence so quickly as rumour, and if civil defence is to be successful, confidence is what is needed. One cannot cooperate wholeheartedly with one's fellow-citizens if there is any mistrust. Let nobody imagine from this that a blanket should be placed on all stories passed from one man to another, for it is normally essential that the truth should be made public. But any story in which there is the least semblance of doubt should be carefully checked and verified before it is passed on to one's fellow-men, there to suffer who knows what embellishments before it is passed on again.

CHAPTER VIII

SHALL I EVACUATE?

CLOSELY akin to the subject of panic and of civil defence as a whole is that of evacuation of the civil population both in anticipation of air raids and as a result of the devastation caused by them. The type of evacuation we shall deal with here is purely voluntary; compulsory evacuation, whether by the civil Government or the military, need not enter into our consideration, as the individual citizen will be left no option in the matter.

Voluntary evacuation is a matter, however, which concerns every citizen when the city comes under fire and even, to judge by recent experiences, some time before the crisis arises. It cannot be denied, for instance, that when Japan first entered the war, in December 1941, there was a wholesale exodus from Calcutta, even though the nearest Japanese bases were some thousands of miles away. Such exodus was prompted by nothing but panic at the possible consequences of staying on in Calcutta. The persons affected fell roughly into two main classes—a certain moneyed section who could afford to depart and live, at any rate for a time, on their own means; and the illiterate labouring class, who were driven by nothing but fear, encouraged, no doubt, by some astute fifth-columning, and many of whom threw up good jobs in their mad rush to escape.

Before considering the topic of evacuation itself, it is necessary first to consider what are the enemy's aims in modern warfare. To put it briefly, if he can disorganize his opponent's war production and war organization in such a way that it ceases to have any effective strength, he can count the

war as won without having fought any pitched battles to win it. In modern totalitarian warfare, the individual citizen in his home and in his factory is as much of a combatant as the soldier in the field. If the enemy can strike at the heart of his opponent's war production and deal an effective blow, he has dealt a mortal wound. And if, instead of bombing or destroying such productive power, he can achieve the same end by driving away the men who operate such power, then so much the better and so much the cheaper the cost.

The whole purpose of this book has been to show that although air raids are frightening affairs, especially to those not accustomed to them, it is possible to put up with them and carry on much as usual, and that the risk of human casualties is not appreciably greater than the risk of casualties in any other sphere of life in normal peacetime conditions, provided one takes the reasonable A.R.P. steps one has been advised to take. Many people, however, imagine that it is essential to run right away if one is to escape from all possible danger. The experiences of the first two and a half years of this war, however, have shown that there is safety in no place which is within striking range of the enemy, for many innocent villages have been bombarded, far removed from any conceivable military objective. It should not be imagined, therefore, that merely by escape can safety be guaranteed, although, of course, some places are obviously safer than others. To rush away blindly, abandoning one's employment and not considering the matter impartially from every aspect, is merely playing the enemy's game for him and making his task the easier.

To deal first, then, with evacuation before the raids have actually commenced. How far should this be encouraged and how far discouraged? At the beginning of the war, it will be remembered, the majority of poor children and their mothers

were evacuated from London to areas then considered safe, a procedure considerably applauded at the time, but subsequently nullified by the determination of many families to return to their own homes. Air raids, it is true, impose a considerable strain on the normal functioning of the city, and from certain points of view the fewer persons there are in the city to look after the better. The approaches to the city may be bombed and it may become difficult for supplies to enter in; the reservoirs and water-system may break down; the hospitals may be filled to overflowing. Under such circumstances, a surplus population only becomes a nuisance, and the less of it there is the better. The question to be determined, therefore, is who is surplus and who is not. At first sight, a rough distinction might be drawn between wage-earners and non-wage-earners, but there are a number of theoretical non-wage-earners who are essential for the city's normal existence. One example is women who cook and keep house for their husbands while they are at work, and another is members of civic services recruited on a voluntary basis. On the other hand, there are certain other classes of persons who, though wage-earners, could equally well carry on their occupations elsewhere.

The first point to consider is the correct time to evacuate, and secondly, if evacuation is decided on, which classes of the population should avail themselves of the facilities for so doing. There is obviously no need for evacuation when the enemy is several thousand miles away, but it is a matter in which each individual will have to use his own discretion. In any case, whatever the time chosen for evacuation, it should not be done in a hurry and panic; but it should be carefully thought out beforehand and all arrangements made for the comfort of those to be evacuated.

The next point is who the evacuees are to be. The 'unwanted' or 'ineffectuals' should obviously be the first to

depart, as their presence throws an additional burden on the city's resources. Unfortunately, it is not always the ineffectuals who are the first to go—many valuable workmen ran out of Calcutta in haste in December 1941, whilst there was a marked increase in the number of beggars within the city's limits. Before deciding to evacuate, everybody must inevitably decide how he is going to live after he takes his departure. If he is already in a job, he should weigh in the balance the secure income he is getting from it and the very slight risk involved in staying on against the virtual certainty of eventual starvation if he abandons his job and has no other means of support. Many coolies who evacuated Calcutta in December, for instance, were forced to return a couple of months later out of sheer economic necessity. This was also the case with many middle-class families who rented houses in country districts away from the city; living expenses told hard on them when all sources of income had ceased. Most people in India have a village home, but the reason many of them leave it is that there is no means of livelihood for them in the village and they must seek employment in the town if they are to survive at all. Therefore it requires most careful consideration on the part of the wage-earner whether the risk of staying on and at the same time earning a sure income is not better than the certainty of economic destitution.

Even though one has the means to evacuate part of one's family, the further point remains for determination, whether there is suitable accommodation for them in the place to which they are being sent and whether they are not throwing too big an economic burden on the place of their destination. The Indian village is not adapted to receiving sudden large influxes of population and its economic equilibrium is liable to be seriously dislocated. The rise in price of foodstuffs, for instance, has been a common complaint in all quarters.

The prices are likely to soar higher if the villages become flooded with hordes of refugees demanding food which the village under normal conditions is unable to supply.

We reach this premise, therefore, that before the raids start and if they are seriously apprehended, non-wage-earning non-effectuals of the city's population would be well advised to leave the city, in their own interests and in those of the city itself, but that they should not so evacuate unless they have some suitable alternative place to go to. At a later stage, if heavy raids are threatened or an actual invasion, it may be advisable for certain sections of wage-earners to go also, leaving behind only the city's essential services, civil defence workers and industrial labour, but this is a matter on which provincial Governments can be expected to issue instructions and, in their absence, wage-earners would be very foolish to go, leaving behind their jobs. For if their job falls vacant and they have to be replaced by someone else, it is scarcely conceivable that their employer will be prepared to take them back again, when the danger has passed away, if they have abandoned him in his hour of need.

After air raids have taken place, there is likely to be considerable evacuation out of sheer panic, unless public morale is such that panic can be controlled beforehand. In Rangoon, for instance, after the first raids on the city, thousands of workers streamed outside, some of them going as much as a hundred miles in their fright. Here again, a little discretion must be used. The very fact that you are able to run away is sufficient indication that you are not yourself a casualty, and you should reason with yourself about the chances of your becoming one by staying on and following the authorities' instructions. There is also the further question of economic loss to be considered if one runs away, even if one is not prompted by any patriotic feelings regarding the fact that the country's war effort is hampered by the loss

of its industrial workers. Most factories and mills have by this time laid in sufficient stocks of foodstuffs to tide their workers over the difficult times that succeed air raids; they will also almost certainly have made proper A.R.P. and first aid arrangements. If the workers run away, there is no certainty where their next meal will come from and no probability even that they will get it; further, if they are caught out in the open without shelter they will be more likely targets for the enemy's machine-gun fire and there may be no first aid arrangements ready to hand. All these factors will be weighed in the balance by the rational man before he decides to abandon his employment.

A further point worth consideration is that under the Government of India War Injuries Scheme, referred to in a previous chapter, only those persons engaged in civil defence work and gainfully occupied persons are entitled to compensation for injuries. If a man runs away from his employment, he can no longer be said to be 'gainfully occupied', and if he should subsequently contract an injury in an air raid, no compensation will be legally payable to him. Empty stomachs and no money are, therefore, likely to be the portion of those who run away, as against enough to eat, compensation and a slight risk for those who stay.

Much evacuation is the direct result of panic and much of it is inspired by fifth-columnists seeking to hamper the output of war industries. That it is largely due to panic is indicated by the fact that when the first terror subsides, many who have evacuated return again in search of their old employment; in Rangoon, for instance, most of those who evacuated in the first mad rush came back again within a week—they gradually came round to the quite reasonable supposition that although the effects of the raids had been horrible, their own houses might possibly still be standing, and the allurements of home comforts triumphed over fear

and cold and starvation in the open fields, which was the only alternative that faced them.

Education is another problem. Educational facilities in the town are usually good, those in the village poor. If all the young men and girls are forced to abandon their studies due to being evacuated, it will be exceedingly bad for the future of the country. It does no young man or girl any good to sit idle at home during the most formative years of life, and this fact should be carefully considered by parents and guardians before deciding to evacuate their charges.

Evacuation is, therefore, a serious matter that demands the most careful consideration of every citizen. The economic aspect is the most important, as nobody can live indefinitely without a regular source of income. This, obviously, is the primary concern of every wage-earner. As regards the rest of the population, ineffectuals are probably better out of the way, provided suitable arrangements can be made for them elsewhere and they are not placing too big an economic burden on the place to which they depart. In any case, evacuation is a matter that concerns every individual citizen and it is his duty, as part of his contribution to civil defence, to place before everybody who is undecided on the subject the pros and cons of the matter, the advantages and disadvantages. This especially applies to industrial workers, and the citizen can perform a great service for his country if he can persuade them that in their own interests evacuation is foolish before it becomes a military necessity.

CHAPTER IX

THE LITTLE MAN AND THE SLUMS

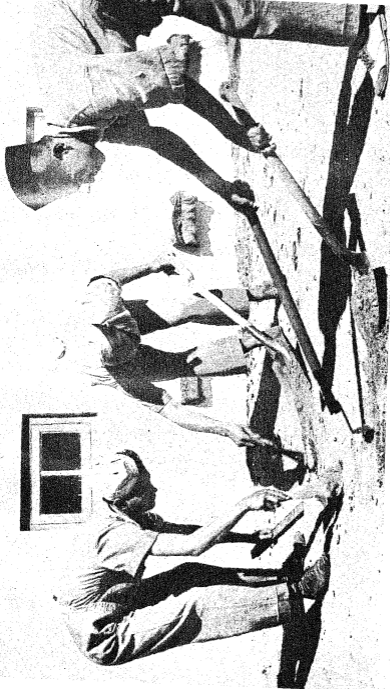
ALL over India, in every town and city, can be found agglomerations of dwellings that constitute India's slums—better known in Bengal, perhaps, as 'bustees'. Although a slum was once described by some wit as an attitude of mind, with particular reference to the behaviour of certain tenants in some of the London County Council's new housing estates, slums are, in actual fact, ever-present realities to those who have to dwell in them. They are partly, if not largely, the offshoot of the Industrial Revolution, although at no period in history have housing conditions of the poor been ideal—it is merely a question of degrees of squalor. Industrial cities of India are particularly unfortunate in the environment in which their workers have to live, for they are almost invariably insanitary, unwholesome and soul-destroying in the extreme.

The slums, bustees or chawls, present a special problem for civil defence, for not only are they in many ways the most vulnerable spots in the city and those where A.R.P. is least applicable, but also, in view of the fact that they house the city's essential workers, it is of paramount importance that they should be protected. On the perhaps questionable assumption that the less educated a man is the more likely he is to panic under strange and terrifying conditions, it becomes essential that poor areas should be given the maximum protection possible. The task is not an easy one. Many slum dwellers are illiterate and cannot read or understand the instructions issued to them by the authorities; many of the instructions, indeed, are totally inapplicable to people

living in such areas. The average slum consists of mud huts with tiled or thatched roofs, with the occasional alternative of bamboo walls and corrugated tin roofs. Structural precautions such as baffle walls and reinforcement of the roof are quite useless, as the outer shell of the huts is of such fragile construction that it would collapse under the first shock of blast, and both thatch and corrugated tin would have no resistance whatsoever to incendiaries. Nor is it of much use telling slum dwellers to protect their glass when they have no glass to protect. The only instructions one can give are of the very simplest and most rudimentary—they can all keep a sufficient reserve of sand and water to fight fires, they can all lay in a reserve stock of foodstuffs, they can all buy cotton wool and identity discs and they can all be told the provisions of the War Injuries Scheme. But even this will not be easy. Buckets and other containers for water are not to be found in every dwelling, and the sources of water are very limited—there may be three taps or tube-wells covering a population of two thousand, and the average time taken to fill a bucket, by standing in a queue, half an hour. (This makes it all the more imperative, of course, that buckets should be kept ready filled, because no fire will wait thirty minutes for their filling.) To persons, also, who find difficulty in scraping together the necessary pice for the day's meal, the exhortation to lay in surplus foodstuffs is not easy of fulfilment. And on top of all this is the average slum dweller's reluctance or inability to assimilate new ideas. The same thing may be repeated to him over and over again, but if it is something new and strange, he will merely nod his head in agreement and do exactly the opposite. This, of course, does not exonerate his better-educated brother citizen from his moral obligation to go on ramming A.R.P. hints into his head until at last he is prepared to follow them. It should, in fact, be a point of honour with every educated

citizen to instruct his illiterate fellow-citizens in slum areas in A.R.P. until at last the knowledge has been digested. The task may be an uncongenial one and a difficult one, but it is one method by which the citizen can show his powers of co-operation, and by so doing he will very directly be contributing to the civil defence of the city.

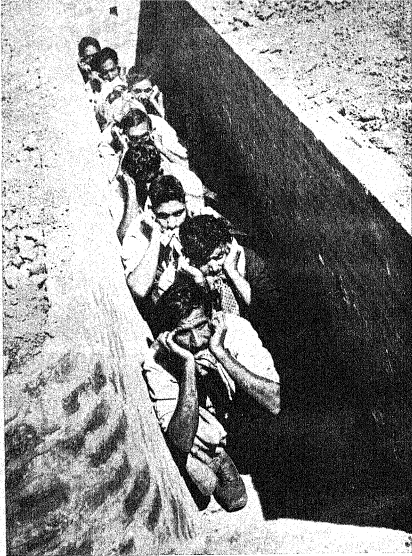
The main tragedy of A.R.P. in the slums is not, however, the lack of practical instructions one can give but the lack of practical shelter. After every citizen has had it dinned into his ears for months that at times of air raids it is essential to take proper shelter, it is depressing to find that shelters for the most essential part of the city's population, the workers, are totally inadequate, and the more so because the inadequacy of the shelters cannot be laid at the door of the authorities. For the trouble of the matter is that slums are usually highly built-up areas in which any real form of shelter is impossible. Many citizens are able to shelter in their own houses provided they are of solid construction, but even this solace is denied to the slum-dweller, for, as we have seen, his dwelling is usually of the flimsiest and a positive death-trap to shelter in. Slit trenches will probably be found in large numbers all over the city, but normally in parks, maidans and gardens of private houses, and parks, maidans and gardens are likely to be far removed from the slums. If a man has to walk several minutes before he can find the nearest slit trench, it is small blame to him if he is discouraged and decides to leave the city, for slit trenches are not infinite in their capacity and the chances are that when he gets there, he will find them already filled to capacity with persons loitering near at hand when the air raid warning sounded. Some slums are fortunate enough to have open spaces in the middle where slit trenches can be dug, but the number will be nothing like sufficient to house all the inmates, quite apart from the fact that they would not be



HOW TO DEAL WITH THE JAPANESE PHOSPHORUS BOMB

It should be scooped up with anything ready to hand—tongs or shovel or anything suitable

Government of India



Government of India

TAKING SHELTER

Block your ears and grip something between your teeth.
And don't lean against the side!

pleasant places to shelter in if the huts themselves caught fire. The same objection applies to brick shelters on the edges of slum areas: each shelter would be very limited in its capacity and it would not be humanly possible to construct a sufficient number to accommodate, in the restricted space available for the purpose in a built-up area, all those desirous of taking shelter.

There are only two solutions of the problem in any way practicable, apart from wholesale evacuation by the Government of the slum areas. The first of these concerns each individual citizen with a house of his own. On the fringe of nearly every slum are pucca buildings, private residences. Consistent with proper provision for the shelter of the householder's own family, there should be a normal obligation on him to throw his doors open at any hour of the day or night to anybody who may require to take cover, and he should let it be known, in the slum area itself, that he is prepared to welcome all and sundry. Some householders may hesitate on the score of possible goondaism, but the slum-dwellers will be so grateful for the hospitality that abuse of it will be practically non-existent and the risk well worth the running. Of particular importance is it that householders should overcome any scruples they might have on the ground of caste or creed. Air raids are no respecters of persons or of communities and they are the supreme test of man's ability to co-operate with his fellow-men. If each individual citizen will make it a point of honour to throw open his house at the time of air raids to anybody, friend or stranger, who may require shelter, the problem of the slums will be three-quarters of the way towards solution.

The other method of tackling the question is for the civil authorities. It appears probable that many provincial Governments will order the demolition of portions of slum areas to provide slit trenches and pucca shelters for the

remainder of the areas, and also to provide fire-lanes to deal with incendiary bomb attacks. The average slum area is such a labyrinth of lanes and byways that it would be impossible for any fair-sized fire appliance to proceed along them should an incendiary bomb attack make this imperative.

From all this, however, there is a germ of hope for the future. If fire-lanes have to be constructed and slit trenches dug, many of the slum dwellings will have to go. When the time comes for rebuilding after the present struggle is over, it is hoped that Governments and Improvement Trusts will take care to see that such monstrosities are not repeated, that callous landlords are forcibly restrained from turning what might have been an earthly paradise into a hell in daylight. The foundations can and should be laid now for a better environment for the workers of the future. And if the better-educated citizen learns to help his poorer brother in distress and shares with him his house and shelter at times of raids, there is great hope that much inter-class and inter-communal bitterness will disappear, for man can only learn to understand his fellow man by close contact with him. In three days of the blitz on London, class distinctions vanished utterly. There is no reason to suppose that they will not do so also in India, under stress of aerial bombardment. In such a manner will good come out of evil and the better world we all are striving for have sure foundation in mutual trust and mutual co-operation. In the trials of today lies the only hope for tomorrow.

CHAPTER X

CIVIL DEFENCE IN THE VILLAGE

Up till now, we have only considered civil defence in its application to the city. But the history of the present war has shown that the city is not necessarily the only object of the enemy's attack. Villages have been proved to be by no means immune if dictates of policy demanded their bombardment.

Naturally, civil defence in the village raises a totally different series of problems to civil defence in the town. To a certain extent, the problems are akin to those of slum areas, since the houses are constructed of roughly the same sort of materials—highly inflammable, as anyone who has witnessed a village ablaze in the dry winds of March can testify, and very easily knocked over as is the lot of many a village dwelling in an April nor'-wester. Many of the elaborate precautions the better-off citizen can resort to are equally inapplicable here also, by reason of the flimsiness of the buildings and the poverty of the occupants. But the resemblance to slum life ends here. Shelter is scarcely a problem at all. The houses in a village may be closely packed together, as in a slum, but all round there are almost certain to be trees and very often jungle, which will be adequate as an improvised shelter if the shelterer will throw himself flat on the ground. Slit trenches, also, can easily be dug in any of the surrounding fields. The enemy is not likely to waste his high-explosives on a village. Incendiary bombs would do much more damage and be far more effective. The villager would, therefore, be well advised also to have ready a supply of sand and water.

One danger the villager will have to be on his guard

against and which will not arise in the town is that of incendiary bombs setting fire to his crops. Much loss can be occasioned if such fires are not dealt with at once, and they are one method of starving out a local population. The Japanese phosphorus bomb is peculiarly adapted to this type of warfare, as hundreds of pellets can be scattered from a single bomb and each pellet may start a separate fire on its own. The only way to check the spread of such fires is for the villager to sacrifice some of the remainder of his crops and practise a little 'scorched earth' policy on his own, thus isolating the fires from anything else inflammable in the neighbourhood. Otherwise, like prairie fires in America or forest fires in Australia, the fire may spread for miles unchecked. Even though villages are not such obvious targets as towns, this does not absolve the villager from his duty of being as fully prepared to meet all eventualities as his fellow-countrymen in the cities.

CHAPTER XI

CIVIL DEFENCE IS YOU

It will be realized, from the preceding chapters of this book, that civil defence is a very complex and diverse affair, embracing a whole multitude of subjects. Its major subdivision is into active and passive defence, the former consisting not only of the A.R.P. services proper, but also of a host of other related topics, arising for consideration both before and after the raid. Passive defence, on the other hand, is concerned with the preservation of morale and the combating of such scourges as panic and rumour. Civil defence is like a suit of armour; there must be no cracks or loopholes in it, if it is to resist all assaults. We have also reached the conclusion that by itself it can achieve little if it is not backed by the fighting forces, in the same way that the fighting forces cannot achieve much if an organization for civil defence is lacking. The two are complementary to each other.

The most important conclusion we have arrived at, however, is that civil defence is the duty and responsibility of each individual citizen. Just as a community is a compound of all its individual citizens, so also is an organization for civil defence. Fundamentally, no civil defence system can flourish properly if it does not have the support of the citizens—and not of one or two individual citizens only but of the whole body of citizens, jointly and collectively. After all, civil defence exists for the benefit of the body of citizens and if they do not choose to support it, there is no justification for its existence. Just in the same way that a water-supply, a lighting system or any of the thousand and one other

amenities of city life do not come into existence without the collective will of the citizens, so also civil defence is bound to be a sterile creation if it does not enjoy the citizens' support. If the citizens show their will to do it, the city can be defended, provided, of course, that adequate aid is forthcoming from the fighting forces. Nobody, however, can shirk his responsibilities under civil defence on the plea that it is somebody else's job. There is a job for everybody under such an organization, and if no other job is to be found, one can keep up one's own morale and the morale of all one's neighbours. Defeat comes as often through despondency as through actual worsting on the battlefield. Civil defence aims at killing such despondency, as well as giving positive protection to each and every citizen. It is up to every citizen to see that he deserves it.

GLOSSARY

Baffle Walls: Walls built a short distance from a building designed to receive the first shock of blast. They should be bonded into the ground and buttressed if built to a height greater than seven or eight feet.

Blast: The explosion of a high-explosive bomb produces an instantaneous expansion of the solid or liquid explosives inside the bomb into large quantities of gas. The violent displacement of air to make room for this sudden creation of gas is known as blast and causes intense disruption and destruction of buildings and objects in its path.

Blood Bank: A reserve of blood-plasma, built up by voluntary donors, to be transfused into casualties who may have lost blood.

Camouflage: In A.R.P. this means the rendering of civil and military installations inconspicuous from air observation.

Control Centre: Headquarters where the heads of the different A.R.P. services receive information of the general situation from report centres and send instructions to the services.

Dispersal: In A.R.P. the distribution of personnel, buildings and equipment so widely that a bombing attack will have the minimum effect.

Fire-watchers: Persons placed in strategic positions either on the roofs of buildings or elsewhere, to give warning of the fall of incendiary bombs.

High-explosive Bomb: A bomb consisting of a case containing a charge of high explosive and a means of detonating that charge. The fuse may be either electrical or mechanical and act instantaneously or have a delayed action.

The weight of the bomb may be anything up to 500 lb. The commonest type used by the Japanese is the 60 lb. anti-personnel bomb, with a low trajectory of thousands of fragments.

Incendiary Bomb: A bomb consisting of a metal casing filled with chemicals acting as an igniter, the object being to cause more fires than can be dealt with by the local Fire Brigade. The principal types of such bombs are:

(i) The kilo-electron bomb, weighing about 2½ lb., of which the outer case is an alloy of magnesium and aluminium and the filling of thermite.

(ii) The kilo-electron bomb, fitted with a high-explosive charge.

(iii) The Japanese phosphorus bomb, weighing about 100 lb., consisting of a large number of pellets impregnated with phosphorus.

(iv) Japanese paraffin wax bombs, filled with thermite and paraffin wax.

Report Centre: A building where reports of damage and casualties caused in air raids are received from wardens and other agencies. The information is passed on by the report centre to the other A.R.P. services with instructions as to quantity of aid required in men and equipment.

Salvage: In A.R.P., rescue, protection and storage of goods taken from buildings damaged in air raids.

Siren: An electrically-operated hooter which transmits the air raid warning and 'raiders passed' signals.

Slit Trenches: Open or covered trenches dug in the ground in zigzags, no arm being longer than 25 ft. The best air raid shelter so far devised for persons caught in the open.

Stirrup-pump: Similar to a garden pump; it consists of a foot-stirrup to hold it firm to the ground, a 30 ft. length of

hose, with a dual nozzle giving, (a) a 30 ft. jet of water, (b) a rain-like spray to a distance of 12 to 15 ft. The spray is used to tackle a magnesium bomb itself and the jet to tackle any resultant fire.

Suction Wave: The positive push or 'blast' by the violent displacement of air when a high-explosive bomb explodes is followed by a negative pull when air rushes in to replace the dispelled air. This negative pull is known as a suction wave and can also cause destruction of buildings.

UXB: Technical jargon for unexploded bomb.

BIBLIOGRAPHY

1. Good technical books on A.R.P. and Civil Defence are rarities and most of them are far too technical for the average general reader. The most comprehensive is *Civil Defence*, 3rd edition, by C. W. Glover, published by Messrs Chapman and Hall, but it can only be used as a work of reference and not as a vade-mecum.

The *Safety First News*, published by the Safety First Association, Bombay, deserves attention.

The following handbooks, published by the Government of India, may be studied with profit for more technical detail than this volume has set out to provide.

1. *General Principles of Air Raid Precautions.*
2. *A.R.P. in Factories and Business Premises in India.*
3. *Technical Air Raid Precautions in India.*
4. *Civilian Duty Respirator. Its description, care, inspection and storage.*
5. *Air Raid Shelters.*
6. *Domestic Air Raid Shelters.*

2. A number of books have now been published by lay writers giving *inter alia* an excellent portrait of cities under fire and how individual citizens stood up to the experience. They are particularly useful from the morale-aspect of civil defence, as the lesson that one country has learned can be transmitted to another. Here is a representative selection:

(a) Narrative Accounts:

'*The Lesson of London.* By Ritchie Calder (Secker and Warburg)

They'll Never Quit. By Harvey Klemmer (Peter Davies)

Post D—Some Experiences of an Air Raid Warden. By John Strachey (Gollancz)

- Ordeal by Fire.* By Michael Wassey (Secker and Warburg)
Dover Front. By Reginald Foster (Secker and Warburg)
Towards the Morning. By James Lansdale Hodson (Gollancz)
Women and Children Last. By Hilde Marchant (Gollancz)
Hospitals under Fire. Edited by George C. Curnock (Allen and Unwin)
I Saw the Siege of Warsaw. By A. Polonius (Hodge)
Carry on, London. By Ritchie Calder (English Universities Press)
The Moral Blitz. By Bernard Causton (Secker and Warburg)
The Wind is Rising. By H. M. Tomlinson (Hodder and Stoughton)
Men Against the Sky. By Winifred Galbraith (Jonathan Cape)
Dawn Watch in China. By Joy Homer (Collins)
Scorched Earth. By Edgar Snow (Gollancz)
The Tree of Guernica. By G. L. Steer (Hodder and Stoughton)
Two Septembers—A Diary of Events. Edited by Stephen Bailey (George Allen and Unwin)
The Road to Bordeaux. By C. Dennis Freeman and Douglas Cooper (Cresset Press) for its portrait of panic
The Oaken Heart. By Margery Allingham (Michael Joseph)

(b) Illustrated Accounts

- Civil Defence in War.* By Mrs A. Billingham (John Murray)
Britain under Fire (Country Life)
Britain Can Take It. By Quentin Reynolds (John Murray)
Grim Glory (Lund Humphries)
Fire over London (Hutchinson)
B.B.C. at War (British Broadcasting Corporation)

